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EPITHELIOMA IN A DOG.

BY F. F. COLLINS, F.R.C.V.S., DUBLIN.

ON the 1st June last, my advice was sought by a Mr. P——, relative to a large dog of the retriever class, that had an excrescence at the extreme point of the inner toe of the off fore-foot. The dog was in very good condition, and eight years old.

A superficial examination of the ulcer disclosed an exposed surface fully an inch and a-half in diameter, possessing a lobular nodulated aspect, dry to the feel, of a dark rusty-red colour, with edges somewhat everted; altogether it was not unlike a dry "Bursatti" sore. The substance of the tumour itself appeared about the size of a small hen's egg. The toe-nail had disappeared, how or where I could not gather; and the only history I could glean of the case was that the disease was first noticed some three months previously, by the dog licking the paw, his lameness increasing, culminating in complete objection to place the foot to the ground. Upon closer examination, I found the tumour extremely sensitive, the deeper portion particularly dense, and involving the second and third phalanges.

I confess I was somewhat bothered to determine the exact nature of the disease, for it was evidently one of no ordinary character, and the books at my command on canine pathology did not relieve my perplexity. The ulcer was apparently cancerous, and the deeper tissues participated in the disease. Under these conditions, I determined to remove the diseased portions

by excision. I therefore, with the owner's consent, and with the assistance of a medical gentleman—a well-known microscopist of this city—placed the dog under the influence of æther the following morning. I made a longitudinal incision the entire length of the two phalanges, both of which I found participating in the disease, the lower one presenting a bulbous appearance. I dissected the surrounding tissues from both bones, and removed them at the joint formed between the first and second phalanges. Hæmorrhage was somewhat profuse from three arteries, each of which I tied with catgut. The minor hæmorrhage was stopped by the application of hot water. The lips of the wound were brought together by catgut sutures, applied antiseptic dressing, and bandaged.

The diseased tissues were taken by the gentleman above referred to for minute investigation, who, in a few days subsequently, pronounced the disease to be true Epithelial Cancer, as the microscope disclosed the typical nucleated, flattened, thin, scaly cell peculiar to that disease.

The nature of the disease being determined, my treatment of the wound assumed more the character of inquiry rather than confidence, as I was not sanguine as to the exact condition of the remaining tissues. The upper portion of the wound closed satisfactorily, but the lower portion presented a hostile tendency. The wound soon assumed a slightly concave, papillary, spongy surface, tending to increase in size, but surrounded by apparently healthy, though everted, skin. These untoward conditions gave further food for mental rumination, the result of which caused my applying a powerful caustic to the centre of the ulcer, which produced a healthy appearance in the course of three days, when I found the tissues immediately beneath the integument at the edge of the ulcer disposed to increase. These I excised, together with the skin which covered them. The ulcer rapidly healed, with a daily dressing of a mild solution of nitrate of silver.

The foot was but slightly disfigured by the operation, and the dog recovered complete use of the limb, and as yet no reappearance of the disease has shown itself.

DERMOID GROWTH ON THE CORNEA.

BY J. NETTELTON, M.R.C.V.S., NORTHALLERTON.

A SHORT time ago I was asked by a client of mine to visit his place and examine a two-year-old bullock, which had something wrong with one of its eyes. On examination, I found a growth on the cornea, about the circumference of a shilling, and a quarter of an inch in thickness, with a tuft of silky hair, an inch in length, growing from the centre.

I removed the growth by the aid of cocaine; it was slightly vascular, and supplied with blood from the sclerotic coat, to which it was slightly attached at its lower margin.

I have not been able to procure the animal's history, as it was bought along with others out of an Irish drove only a few weeks ago. Although the growth was not noticed at the time, I have no doubt in my own mind but that it was congenital.

It will not be out of place here to bear testimony to Mr. G. Gartside Mayor's remarks on cocaine in the Journal of May last. As a valuable agent in veterinary surgery, I can now endorse all that has been written in its favour. I was, in this case, enabled to operate with the animal standing, without the least inconvenience to myself or pain to my patient. Without the aid of cocaine or chloroform, it would have been almost impossible to perform a delicate operation of this nature without injury to the cornea.

A CASE OF OSTEOID CYSTIC TUMOUR IN THE HORSE; ITS PATHOLOGY, AND SURGICAL AND ANTISEPTIC TREATMENT.

BY RICHARD W. BURKE, M.R.C.V.S., A.V.D., CAWNPORE, INDIA.

A C—B pony stallion, seven years old, the property of Mr. Darrah, C.S., Cawnpore, was recently brought for my opinion, showing a large tumour below the left branch of the inferior maxilla, on which I afterwards operated. Mr. Darrah's account, communicated to me through Mr. Thompson of the 1st Bengal Cavalry, was that the abnormality had been pronounced "congenital" by some medical authorities already consulted; that any surgical interference would involve an obvious risk, and

probably lead to its future recurrence, supposing operation were undertaken.

Such controversies are hardly intelligible except to professional men, and I must confess I did not base my prognosis on that phase of its testimony alone, which seemed opposed to what was explained by inquiry into the history of its causation; the result of which showed me that we must forego no opportunity, small or great, for realising first the causes of diseases, both in respect of diagnosis and prognosis, which must always pave the way for rational surgery, and constitute the only proper basis of treatment in similar cases, such as the least-experienced student in therapy may find no difficulty in appreciating.

The most interesting incident of the case was, perhaps, its *history*, which even to an exclusive clinician might of itself have sufficed to indicate the nature and significance of the pathological changes that were found to obtain, through the aid of the microscope, against discrepant and unconvincing opinions.

It may not be unimportant to state that the animal in question had been put to a mare some three months ago, and as he was about covering her, she, from "tetchiness," kicked him under the jaw, which caused the part to swell up, and become inflamed and painful. Mr. Darrah stated that there seemed at first to be a hope that, as time went on, the swelling would go down, without recourse to operative interference; and as medical opinion had been already obtained, this hope became almost a conviction. It was at length seen, however, that operation of some sort could not well be avoided for many weeks longer, and the owner consequently decided upon taking immediate veterinary opinion on the state of his animal, which had been thus far neglected through over-confidence in medical opinion hardly familiar with details of *special* clinical experience, and by reason predisposed to throw an air of mystery over one of the simplest events in pathology, as applied to the lower animals. If it is paucity of literature that has now and then brought the opinions of the veterinary practitioner to ridicule, I have my plea in communicating these few facts upon a subject of, what appears to me, such common occurrence.

Conflicting opinions having been given as to the necessity of

operation in this case, I may be reasonably excused for having brought myself to contemplate that contingency, and performed the operation. This result might have been to some extent anticipated, as the history of the origin of the growth, from what I gathered, was never previously obtained, and it was thought the process was, therefore, a congenital one. Having the history, however, to guide me, there appeared no mean possible, no delay in treatment; and I decided either to operate and suffer the disease to grow no longer, or let it go bad altogether. Happily in the present case, its history proved equal to the emergency; but it is not easy to understand, either from the owner's own description, or from examination made by me previous to operation on this disease-structure, how the process, which was sufficiently significant to come within the dimensions of a tumour measuring six inches long by four-and-a-half wide across its thickest diameter at the base, and exhibiting certain important histologic changes in addition, came to occupy so short a time as three months in developing.

Even taking into consideration the maximum of danger suggested by conflicting opinions, the operation generally must be regarded as after all trivial; since all that we need fear in similar cases is the presence of the branch of artery supplying the morbid growth with nourishment, which must be looked for and ligatured, even supposing it to be divided during operation, as was the case in my own patient: blood was spurted out with considerable force, its direction was carefully followed, and the vessel of emission secured and ligatured by silk in the ordinary manner, and without much difficulty. In fact, there was comparatively little or no hæmorrhage attending the operation, except what followed the division of the nutrient artery above described, immediately before it was ligatured.

It would be interesting to know if the physical characters of this tumour were akin to those of tumours of this class generally. Whether the distinction also was marked from a congenital growth; perhaps it was no greater than palpation usually reveals in these cases. It is curious, though, that whereas disease-growths of this description, and especially when they are not congenital, are ordinarily associated with heat,

pain, fluctuation, etc., it was possessed of neither of these peculiarities. Absence of inflammation and no fluctuation, together with a non-attached, movable condition of the skin covering this growth, as that noticed in health, combined to make the diagnosis one of peculiar interest. With a tumour thus rapidly growing, moreover, it was but natural to expect that the chances of operation would tend to become daily more remote, if not impracticable, owing to extension of the disease process which delay would necessarily entail. It is to this point, no doubt, that the practical veterinarian's attention is likely to be principally directed.

Insomuch as a tumour of such considerable size, and giving attachment to bone, had to be removed, chloroform was administered. For the sake, probably, of regular union, the skin was divided by a circular incision made by the scalpel, about an inch below the base of the tumour, which was firmly adherent to the posterior border of the inferior maxilla, and blended with it by a fibrous attachment. The skin covering all was next enucleated, the masseter muscle on that side was carefully dissected back to the extent of about an inch or more, and the hyperplasia, together with the maxillary border thus exposed, amputated. This done, the wound was washed with a 1-40 solution of carbolic acid, the skin stitched, and the whole dressed with cotton compress and bandaged over by one or two rolls of flannel, to keep the dressing in position and prevent access of air into the wound. Every portion of diseased tissue had thus carefully been removed, and diseased bone completely cut away, that there should be no chance of recurrence.

The tumour, which was carrot-shaped, and found to be made up of five descending cysts, was filled with a colourless or slightly yellow serous fluid, which escaped on puncturing its walls, had doubtless originated by a succession of developments, and by fresh softening—until it was finally removed by operation, before attaining a sixth development, which it probably would have done, if the process had been allowed to continue unchecked very much longer. Ossification of the walls of the cysts, more especially marked in those of the first formed at the base, had taken place, and in places fibroid transformation, in which

calcareous matter was more or less abundantly deposited, was also noticed, leaving the intervening portions soft, cartilaginous-like, and presenting numerous superficial centres of ulceration, especially marked on its internal surface.

Microscopically examined, the tumour was found to consist essentially of the same histological elements, as true Enchondroma.

The cysts at a guess might have held a clear pint of fluid.

A fact of singular importance, which I have never before witnessed in any animal, was noticed to follow the state of anæsthesia from chloroform inhalation in the case of my patient, viz., an apparent cloudiness and opacity of the cornea, which gradually passed away as he recovered consciousness again. This would seem to be due to temporary inertia of the corneal vaso-motor centre, causing stagnation in the lymph-spaces. What is still more significant, and not so easily explained, is the fact of its occurrence more in one eye (right) than in the opposite; both were, however, perfectly healthy, *i.e.*, preceding and some time after the effects of the anæsthetic had been tried.

The after-treatment consisted in constant steaming of the wound with *neem vapour*, and assisting a free discharge, conditions reasonably favourable to the healing process in all wounds. True, the followers of Lister have shown that the secret of his great principle lay, for the most part, in the system of *drainage* that was thus ensured whether, through the interposition of the gauze, sponge, catgut, horse-hair, gutta-percha tubes, or other agencies; even more, perhaps, than in the specific precautions themselves that are adopted for directly attacking the cause* of discharge in wounds, septic irritation. And in veterinary practice, I think, neem vaporising may reasonably intervene as a valuable adjunct to the other means of drainage just enumerated, and generally employed in the antiseptic dressings of those wounds which are characterized by much tissue-discharge, or where bone is injured.

The absence of inflammation in wounds so treated was one of the salient features of that following the operation on my patient, which must be attributed to the sole effects of neem

* "Without Micro-organisms no Suppuration." By M. Strauss. 1884.

vapour causing its closure and ready union in the comparatively short space of twenty-one days. It is now perfectly healed, is not accompanied by any puckering of the surrounding skin, as sometimes obtains in these cases, and has no feature about it that would lead me to suspect a probable return of the morbid growth.

"Neem fomentation," by surrounding a wound with a germicide vapour, proves antiseptic, not only by assisting free discharge, preventing inflammation of wounded tissues and putrefaction of the discharge, but probably also by rendering inoperative the germs that enter in it.

The wound was also dusted over with *Iodoform*, and cotton wool used as an antiseptic plug, in the intervals when the men in attendance gave way to a species of temporary *vis inertia* from which the native of India is proverbially said to suffer The discharges throughout were in this manner kept inodorous, aseptic, and all that could be desired.

It is strange to note, only the other day (March 15th) I was reading an account of the "antiseptic value" of Iodoform as claimed by Dr. Ladislas Lesser, of Leipsic, when my patient I am now describing had been cured and discharged from hospital just a fortnight previously. I may state, however, that I received my bias in regard to the properties of Iodoform, not from Dr. Lesser's account, but many years ago, in Mr. Chiene's wards in the Edinburgh Royal Infirmary, 1877-8, when I had large opportunities of watching its effects, at least on the human patient. The belief then was that it was an *irritant*, and caused suppuration in a wound; it is nothing of the kind, however, as its more extended employment afterwards proved, and as Sir Joseph Lister has himself since abundantly demonstrated.

It is as well to mention in this connection that Billroth of Vienna, Dr. Burgmann, Professor Richard Volkmann of Halle, and all the best authorities, both in England and on the Continent, are now pretty well agreed that, to dress a wound antiseptically, it is not essential in every case to employ the carbolic spray. Besides, the principle of *rest* advocated and applied in practice by John Hunter, counts for something in these cases. But it is not at present intended to take up the subject farther.

The system of treatment by ***neem fomentation*** in the case of castration wounds, with native practitioners, dates from the earliest times; but its explanation has hardly been before given, or its *raison d'être* fully described.

PECULIAR CASE OF OCCULT LAMINITIS, OR LAMINAL CONGESTION.

BY J. HUNTER, V.S., SKENE, ABERDEENSHIRE, N.B.

THE apology I make for briefly chronicling this case—if, perhaps, a corner of space may be found for it in the VETERINARY JOURNAL—is that, as far as I am aware, with recovery it may be a *rara avis*. While at tea one evening in the middle of November last, I observed one of James Proctor's, Esq., of Kirkville, carriage horses pass the window, showing a miserably haggard countenance and a spasmodically tottering gait. So much so, that I passed the remark that I would require to see that animal before he reached home again. Accordingly, after having some of his shoes removed and put on again in the forge at the other end of our tiny village, I had a call from the coachman stating that one of their horses had *stuck* on the way from the "smiddy," and would not move a step. On approaching the animal I observed the unmistakable fiery flash of fever in his eyes; pulse about 100 and irregularly intermittent, respiration much accelerated, but temperature nearly normal. The hind legs were drawn forward under the body in such a fashion that the four feet were nearly all in contact. By dint of shoving and pushing, and now and again manually lifting and shifting a foot, he was at last with difficulty got into the stable, where the shoer, with the assistance of a few other men, had much trouble in removing the fore shoes, the one foot being as bad as the other. On manipulation of the limbs and feet, the only tangible symptoms I could find to account for such lameness was the manifestation of pain on gently tapping and squeezing the walls and soles of each fore hoof. Between four and five quarts of blood were immediately abstracted, an aloes ball administered, and I ordered the feet to be placed in a fine linseed poultice,

and periodic doses of Fl. Tinct. aconite to be given. On calling next day, fully expecting, as usual in apparently similar cases, to find a mitigation of the severity of the symptoms, I was rather astonished, instead of this, to observe their intensification. The animal was in a painfully-looking stretched-out position, with the fore limbs shaky and determinedly posted out forward, seemingly suffering extreme pain, constitutionally as well as locally. A summing-up of the state of symptoms not warranting further phlebotomy, I advised an increase in the dose of aconite, with simple febrifuge medicines and a continuance of poulticing. Third day: Constitutional symptoms slightly easier, bowels relaxed, with bad smell. Treatment same, with addition of diuretic powder. Fourth day: Much the same, but bowels constipated; the groom complaining of the terrible business of changing the poultices, the horse not having as yet dared to lie down, and it was scarcely possible to hold up either of his fore feet for a moment. On examining the feet I found a perceptible swelling around both pasterns—slightly more so on the one limb than the other. There was a little abnormal heat of the wall and sole of each hoof, but the animal was utterly unfit for the slightest locomotion. Advised the discontinuance of poulticing, and the feet to be placed in finely-made clay, and cold-water swabs applied round the pasterns, and administered a laxo-derivative ball. Fifth day: Constitutional improvement. Prescribed some alkaline powders; spare diet, restricting his regimen to a few fresh carrots, a mouthful of bran-mash, and a bite or two of hay, with cold water *ad libitum*. After a few days he began to lie down and rest himself, and the symptoms were markedly easier; the feet now being kept in leather boots amongst fine clay, there was a gradually improving state of matters for about three weeks, The following week, however, showing no improvement, I had the boots and clay removed. The pasterns seemed a little enlarged—in fact, the very feet themselves looked somewhat bigger, this being the more noticeable as the one was more so than the other; but there was no appearance of contraction or rings, and no loosening or convexity of soles, or any of the usual results of Laminitis. On visiting next morning, I had him led out—the result being that

he could scarcely cross the road without tumbling on his nose, but on the greensward he could walk wonderfully well. Prescribed a sharp blister round the coronet, to be repeated in the course of eight days. A fortnight afterwards I had him *shod*, but his locomotion proved very uncertain and short on the hard road, especially one fore foot, which still remained perceptibly larger —this extending as far up as the pastern joint. So, fancying from what I had seen and also what I had read about such cases in this valuable Journal and elsewhere, the animal might be of no more use for carriage purposes, I proposed having him examined by some of my professional friends. This accordingly was done: firstly by Mr. Sorley, M.R.C.V.S., Hazelhead, Aberdeen, who pronounced the case to be fracture of the coronary bone of the left fore limb, and that he would be of no more use for road purposes; secondly by Mr. Thomson, M.R.C.V.S., Aberdeen, County Inspector, who sent us a *certificate* that the horse was suffering from Ringbone, and was incurably useless for carriage purposes. Deriving but scant comfort from these different opinions, I fell back upon my own resources, and commenced blistering again, repeating it every ten days for a month. The response to this treatment was so encouraging that he was sent away to the neighbouring farm of West Fornet, to take a turn at the plough. Mr. Dewar, M.R.C.V.S., Kintore, who had a look at him some time afterwards, gave it as his opinion that he had suffered from a sprain. Latterly, Mr. Able, farmer, purchased the animal, and he is now doing his road work in the dog-cart, and taking a turn at any other work, apparently as sound as a bell. The gradual disappearance of the swelling, and the non-appearance of any other abnormality in the parts give reasonable grounds for supposing that recovery is permanent.

Note.—It must be understood, or at least I presume, that these three professional gentlemen whose names are quoted did not know the previous history of the case before giving their opinions; and I communicate these facts simply with the view of illustrating the peculiarity of the case, and how apt we are, at different stages of some of these singular diseases, to form so many erratic diagnoses and prognoses.

HYDROCHLORATE OF COCAINE: ITS USE IN OPERATING ON THE EYE FOR *FILARIA OCULI.*

BY J. MILLS, M.R.C.V.S., A.V.D., MADRAS.

HAVING heard a great deal regarding the advantages of the use of hydrochlorate of cocaine in operations on the human eye, I decided on the first opportunity to give it a trial.

Fortunately, a case was admitted into the Government Civil Veterinary Hospital under my charge, on the 2nd of June, 1885. The patient was a large waler mare, extremely troublesome and nervous—in fact, it was with the utmost difficulty that anything like a good view of the eye could be obtained. I therefore cast her, when the parasite was clearly seen wriggling about in the aqueous humour. There was slight inflammation, with partial opacity of the lower portion of the cornea, involving nearly one-half of its surface, which was undoubtedly brought about by the case having been allowed to go too far before surgical aid was sought for, as the worm had been noticed in the eye fifteen days before the mare was brought to me.

This operation, although by no means new, has, I venture to think, never before been performed by the aid of this new local anæsthetic. Therefore I trust a short history of the operation and the drug will not be without its interest.

I procured a solution containing one grain of cocaine in twenty-five minims of water—or of a strength of 4 per cent. The membrana nictitans was held back, and the solution painted over the surface of the cornea, conjunctiva, and eye-lids, with a camel's hair brush. In about ten to twelve minutes complete anæsthesia had taken place, with considerable dilatation of the pupil. I then made a small puncture with the point of a Macnamara cataract knife, well guarded with lint, at the upper portion of the cornea, through which the filaria escaped. In a little less than twenty minutes sensation returned to the eye. No inflammation followed the operation, and the case has done well from the first. The opacity is gradually disappearing, and patient will be discharged in a few days.

I have found, from considerable experience of these cases, that there is no instrument equal to the Macnamara knife.

This new local anæsthetic cannot but prove of the utmost value in veterinary practice, more especially in operations on the eye. It has only one drawback, and that is its high price. Previously, in operations of this kind, I always administered chloroform with the best results, and of course—although I have never had any accidents with chloroform on the horse—still the danger attending its use, compared with that of cocaine, is great indeed. Therefore the latter must, for the future, act as a valuable and safe substitute for chloroform in the production of local anæsthesia.

Description of the Drug.

The plant from which the alkaloid cocaine is obtained is known to botanists as *Erythroxylon coca*, a member of the N.O. Linaceæ. It is a bushy shrub, with numerous smooth leaves, which are lanceolate or somewhat oval in shape, and tapering towards the petiole. The flowers are small, and of a yellowish colour. The fruit is a little drupe, over one-fourth of an inch in length, ovoid in shape, quite plump when green, but furrowed longitudinally when dry.

The coca plant is cultivated extensively in Peru, Bolivia, Columbia, and in some other parts of South America. It is said to thrive best in a moist, mild climate, at an elevation of 2,000 to 5,000 feet above sea-level. In this Presidency it is said to grow very well at sea-level on the coast, but its cultivation might be much easier and more profitable at higher altitudes.

In some parts of South India a species somewhat resembling the American one, viz., *Erythroxylon monogynum*, is said to grow well, where it is known as "Devadaree" and "Adavi Goranta." The therapeutic value of this shrub has not yet been determined.

Note.—Since writing the above the mare has been discharged from hospital, with complete restoration of vision, and no opacity whatever of the cornea, twenty-four days after the operation.

OBSERVATIONS ON SOUNDNESS.

BY R. H. DYER, M.R.C.V.S., LIMERICK.

(Continued from page 171.)

OPHTHALMIA is so well known that it needs but slight mention; still, I think, much as we are acquainted with the disease, it frequently passes before us in our examinations as to soundness without any remark being made of its presence. If the owner of an animal in question was aware of the feelings of his trusty steed, he would in all probability consult some member of the profession as to the presence or absence of the disease, and I have no hesitation in asserting that the verdict would be in favour of its presence, and a recommendation of treatment such as appeared advisable under the circumstances. How different it is when called upon to examine as to soundness: although it is seen and known, scarcely any one would venture to write the word *unsound* against the horse, yet no person would assert that it would be wrong to do so. Custom, however, and the imperfect state of the law, are the two causes in operation at the present time, and for many years past. When we take into consideration the speedy manner that diseases of the eyes of our equine patients run their course, it becomes necessary to pay a little more attention to them than is generally done. I have been often surprised at the issue of a case, not having been prepared for it. I confess I have examined many horses whose visual organs appeared to me to be in a very suspicious condition, still I dared not state that I considered the animal would soon be subject to an attack of acute inflammation which, in all probability, would end in the loss of vision. It has been held by some practitioners that we have merely to state our opinion with reference to the present, and have nothing to do with either the past or the future. This may hold good when writing certificates in one particular form—for instance, if we certify that a horse is sound, or that he is unsound. This mode of expressing an opinion is very fair and legitimate, but if we take the better course which I have for many years past endeavoured to establish, then I think we may carry our investigation somewhat further, and offer an opinion as to the

probable result of any defect we may meet with. This has always seemed to me to be the object of an examination as to soundness. If an animal has an enlargement upon a limb, it can be seen by the purchaser as well as by the surgeon, but the former may require the experience of the latter as to the nature of the enlargement, which will influence him as to whether the animal be retained (purchased) or not. So it should be with defective sight. An eye may be small or prominent; either of which may be a defect and cause the animal to shy; or the horse may be subject to periodic attacks of Ophthalmia which will terminate sooner or later in the loss of vision. This state of things should be mentioned. Experience teaches me that only a few cases are of a simple or harmless character. For the most part they are constitutional, and it is not likely cases of Traumatic Ophthalmia will be submitted to an examination. There are cases, however, occasionally produced which have already run their course, and one, if not both eyes, are found to be sightless. I fear that, as veterinary surgeons, we are almost as much in the dark as to the true causes of blindness as we were a quarter of a century ago. I think we have gained something in the way of treatment, however, for it is very remarkable, with our present store of information, how we can often defer the evil day for a considerable time by our promptitude and present system of treatment, which, so far, is a gain. Writers upon this subject differ as to the name this particular kind of disease should be termed. One wishes it to be called Specific Ophthalmia; a second, periodic; a third, odontalgic; a fourth, lunatic; a fifth, constitutional; a sixth, hereditary, and so forth. I am inclined to the term constitutional, as being the most to be preferred. I say this with all deference to my teachers, as I know it is counter to the opinion of some of them; but if the fact were known that scarcely anything learned when at school, so far as therapeutics are concerned, do I acknowledge or practise now; all is changed with me, and I have for many years past struck out a path of my own, which, I am proud to state, has been of infinite service to me. My reason for naming this complaint constitutional, is from the fact of there being a peculiar idiosyncrasy in the animal to contract this particular affection.

The term lunatic, or moonblindness, is so absurd that it needs no second thought. Periodic is a very good term, because the eyes are attacked periodically, but for no other reason that I can see. The word hereditary has a too sweeping significance to be used generally. If we employ the term, it most certainly has reference to the whole family. It may be argued, on the other side, that the word constitutional will have the same tendency; but I cannot agree that it has. The animal affected with this ailment may be himself alone subject to it. I know of several similar instances in the human family. Writers upon these diseases appear to have mixed up the various kinds too confusedly. Although the horse is not liable to so many eye-diseases as man, still I am far from believing that the several cases I have seen should be treated of so indiscriminately in books as they are. Percivall gives a list of about fourteen different diseases, which are insufficient for the present state of our art. The treatment may be alike in most cases, but at the same time it behoves us to keep pace with the times, and pursue the same course that writers in the sister profession have done. The entering thus far upon matters surgical may be considered a digression.

We have merely to consider whether the eyes under examination are in a normal or healthy state; for, as I stated before, it is seldom we are called upon to inspect eyes until all the acute symptoms have disappeared; and when the owner is sanguine that his horse will pass he offers him for sale. It is at this juncture that the best of our judgment is frequently required to be put in force. We will suppose an animal has had an attack of, as I must call it, Constitutional Ophthalmia—he may or may not have had the advantage of professional attention. The owner is of opinion (as most owners are) the horse is sound; he offers him for sale at a fair; he succeeds in parting with him, subject to the examination of a veterinary surgeon. This may be in the month of July, August, or September, when the weather is extremely hot and the day bright. In all probability there is no house near the spot, in which the horse can be placed for the examination of the eyes to be proceeded with. The muscles of the iris have effectually done their work by closing the pupil, so

as to baffle all the attempts of the examiner to look beyond the iris (the use of a hat not being in such a case of the slightest assistance). The horse is returned sound, because of the contraction of the pupil. He is said to be all right in this respect. A horse may be totally blind, and yet the contraction of the pupil take place. One instance, by way of example, I will relate, which occurred in my practice. A nobleman purchased a mare and requested me to examine her, which I did, and the eyes were pronounced amaurotic. The mare was of course rejected, and as there was a fair to be held soon after, it was believed she would be offered there. The nobleman said he would look out for her at the fair, and ascertain if she were sold and examined, as I told him she doubtless would pass if the day was a sunshiny one. The mare was sold, examined and passed, much to his lordship's amusement, who told me of the circumstance on his return from the fair. In Simple Ophthalmia the eye generally becomes sound and healthy, unless a small feather-like opacity remains from the injury. A few days since a case was submitted to me for examination by an M.D. who had purchased a horse of some value. He said that the left eye had been wounded and a mark—opacity—was present, but if I thought perfect restoration would take place soon he would not object to conclude the purchase. I found the transparent cornea had been much injured immediately below the pupil, and an opaque line was observable above the pupil, consequently in his then present condition I could not pass the horse. The owner asked if I could give him a remedy. I prepared a suitable application, which he took and employed for a week. On his return I found the wound perfectly healed, but the opaque line still remained. In old cases of Keratitis, we frequently find traces of disease which will, more or less, intercept the pencils of light as they proceed to the retina. With such cases it is not very difficult to deal. They are of necessity unsound. The diseases of the cornea, iris, capsule of the lens, lens, vitreous humour, and retina, are those we have chiefly to consider, although a passing thought may be spent upon the palpable injuries which now and then require that a portion of either one or the other be excised. I think the time has nearly passed for any person, however antiquated his views

may be, to think of excising the *cartilago nictitans*, although I sometimes hear of such a complaint as the "Haws" existing. Keratitis or Inflammation of the Cornea, is a complaint of some moment to the veterinary surgeon, because an attack of Simple Inflammation is likely to extend to this structure. The fact of there being more than one layer in the cornea, renders the disease more complicated in its treatment than it would be if only one was present. Indeed, I think this remark holds good in the treatment of all diseases. It is not probable we shall have our attention directed to a case for inspection until it assumes the chronic stage, which can readily be known by the colour of the membrane. If not perfectly transparent it must be held as unsoundness. The aqueous humour is not liable to a distinct disease that I am aware of, although I have observed a muddy appearance of it, and likewise pus in its composition. Iritis often follows an attack of Keratitis, and is occasionally its accompaniment; the result of which, if not taken care of, will be an adhesion of some of the fibres of the iris to the capsule of the lens, which will interfere with its movements. Any abnormal change in its structure will constitute unsoundness. The corpora nigra in some eyes are particularly large and pendulous. This has been held to be unsoundness by some teachers, but I have never known them, however large, to cause the least inconvenience to the horse, nor would I reject an animal having them largely developed. Cases of the kind have been brought to me in dispute, and I invariably consider such as matters of no moment. I have both ridden and driven horses which possessed these enlargements, and always met with them in the best of eyes.

(To be continued.)

THE INFLUENCE OF HEREDITY AND CONTAGION ON THE PROPAGATION OF TUBERCULOSIS.

(*Continued from p.* 185.)

Country Breed.

	Price of Animals.	Total value of a Lot of 100 Cattle.	Total average No. of Cattle.
Calves	... 25 to 30 marks	... 175 to 210 marks	... 7 calves
Heifers	... 130 „ 150 „	... 2,990 „ 3,450 „	... 23 heifers
Cows	... 150 „ 200 „	... 7,650 „ 10,000 „	... 51 cows
Bulls	... 150 „ 250 „	... 1,500 „ 2,500 „	... 10 bulls
Oxen	... 350 „ 450 „	... 3,150 „ 4,050 „	... 9 oxen
		15,465 to 20,410 marks	100 cattle

Maximum and minimum averages 204 to 150 marks.
Average value of each animal, 180 marks.

The average value of an animal of improved breed is, for the breed of—

(*a*) Messkirch... ... ... 297 marks
(*b*) Neckar ... ... 237 „
(*c*) Baar ... ... 276 „

With regard to the indigenous breeds, the price for each animal is—

(*a*) The Forests ... ... 151 marks
(*b*) The Odenwald ... ... 146 „
(*c*) The country in general ... ... 180 „

The animals of the three country breeds therefore average about 215 marks each animal.

From the annual abstracts of the district veterinary surgeons, the total number of these common cattle is to the improved breeds as 3 to 2. The value of an animal, such as we have estimated it, is therefore perhaps 10 per cent. more than the real value; for in our calculations the two groups have been reckoned as equal.

The prices of the animals estimated in these calculations have been compared with the prices at the Cattle Market of Mannheim, and they do not differ much; in fact, the average price at this market is, for—

9 fat bullocks	... 3,546 marks,	or 394 marks each
55 lean bullocks	... 12,815 „	233 „ „
7 milch cows	... 1,988 „	284 „ „
29 calves	... 1,073 „	29 „ „
100 cattle	19,422 marks	

We may therefore estimate the average price of each of these animals at 194 marks.

Taking for the basis of our calculations the information furnished by the local assurance associations provided with regular statutes, we find the average value of an animal to be 169 marks.

With regard to the compensation which has been paid to cattle-owners for animals slaughtered by the authorities, we find that the average assessment in estimating 159 animals slaughtered has been 198 marks.

In considering all the figures, we may admit that the average value of a bovine animal in the Grand Duchy of Baden is about 200 marks.

Theoretical calculations having given, as the average value, 215 marks, the Mannheim fairs value 194, the local assurances value 169 marks, and the estimate of animals slaughtered by order 198 marks, we may admit the average value to be $\frac{776}{4}$ or 194 marks.

The *third question* we have to solve is relative to the annual loss in cattle. The following is the information we have gathered :—

	Dead.	Killed.
In 1872	548 ...	... 3,830 cattle
„ 1873	473 ...	... 4,189 „
„ 1874	677 ...	... 5,204 „
„ 1875	1,053 ...	... 5,060 „
„ 1876	898 ...	... 4,805 „
„ 1877	796 ...	... 4,654 „
„ 1878	893 ...	... 4,586 „
„ 1879	1,170 ...	... 6,736 „
Total	6,508	39,064 „
Annual average	814	4,883 „

The yearly average of animals which died from 1872 to 1879, was 0·13 per cent. of the bovine population, and that of animals killed during the same lapse of time was 0·76 per cent., or a total of 0·13 + 0·76 or 0·89 per cent.

In making the same abstract from the information supplied by the assurance societies, we find the following figures :—

The annual average of cattle insured during the period between 1872 to 1879, was 91,818, the average loss being

1,317, or 1·4 per cent. yearly. Between this and the preceding abstract there is a difference of 0·51. This difference is perfectly explained by the fact, that it was more particularly the small farmers who insured their cattle; and these, being worked, were more exposed to accidents than cattle not so employed. So that there is more danger by 0·5 per cent. for working than for non-working cattle in the Grand Duchy of Baden.

The *fourth question* to solve is that of the amount of pecuniary loss caused by the mortality in cattle. According to the above calculations, the average value of each head of cattle in the Grand Duchy of Baden is 200 marks. The skin is generally the only portion of an animal which has died naturally that may be utilised, and it has scarcely 4 per cent. of the total value of the carcase, and should, consequently, be estimated at 8 marks.

From the above calculations, it appears that in the time between 1872-1879, 814 cattle died, and the value of each being on the average 200 marks, we find that the total loss may be estimated at 162,800 marks per year. From this sum we may deduct 6,512 marks, or 4 per cent. saved in utilising the skins of these animals; thus leaving the average sum of 156,288 marks lost annually in animals which died in a natural manner. Twenty per cent. of those necessarily killed were, to judge from the reports of the meat inspectors, of value besides that of their skin, 4 per cent. of their total value. Of 50 per cent., parts estimated at about 40 per cent. of the total value of the carcase could be utilised; and of 30 per cent., about 60 per cent. of the total value could be realised as if the animal could be considered healthy.

In seeking to determine the annual damage in the Grand Duchy of Baden, through loss of cattle from disease or accidents terminating in death, we arrive at the following results :—

The average number of cattle necessarily killed being 4,883, and each being estimated at 200 marks, the 977, or 20 per cent. of these 4,883 animals, of which the skins only could be used, represent a value of 195,400 marks. The value of the skins being estimated at 4 per cent. of their total value, reduces this loss to 195,400−7,816, or ... ... 187,584 marks.

The 50 per cent. of these 4,883, or 2,417 animals which can only be partially utilised, represent a value of 483,400

marks. The parts of the 2,417 animals which may be realised (40 per cent.) represent a value of 193,360 marks; so that there remains in the animals a deficit of	290,040 marks.
The 30 per cent. of these 4,883 animals which remain represent a value of 1,450 × 200 = 290,000 marks. The realisable portions of these 1,438 animals, equivalent to 60 per cent., amounts to 174,000 marks. The deficit on the latter is therefore	116,000 „
In recapitulation, the sum lost upon animals necessarily slaughtered may be valued, for the Grand Duchy of Baden, at 187,584 + 290,040 + 116,000 = ...	593,624 marks.
The loss on animals dying from disease	156,288 „
The total loss may therefore be estimated at	749,912 marks.
The total value of all these animals, died or killed, is 5,697 × 200 = ...	1,139,400 „
The total loss on these animals would be	749,912 „
The parts which may be utilised may be valued at 1,121,800 − 743,216 = ...	389,488 marks.

The losses are therefore about 65·82 per cent., and the value of the parts realisable, 34·18 per cent. of that of the animals as they stand.

It would then be necessary to pay an average of about 132 marks for each head, allowing compensation equal to the entire value of the animal, the sum realised by the utilisation of the parts which have not been destroyed being deducted.

If we compare these figures with those furnished by the assurance associations, we arrive at the conclusion that, on the average, these pay 111 marks per head for cattle which have died or been killed, and a sum of 145,919 marks annually for the 1,317 cattle for which compensation is due.

In seeking to find, by analogous calculations, the rate paid in 1879 for cattle killed by order, because of epizoötic diseases, almost the same result is arrived at.

The number of animals sacrificed in these conditions has been 159, 40 of which were affected with fatal maladies; in the remaining 119 the diseases did not assume this character. On the average, each of these might be valued at 198 marks. For those which died, the compensation paid by the State has been fixed at an average of 131 marks, a deduction being previously made of one-fifth of the value of the animal and of the sum

realised by the sale of the useful parts of the carcase. With regard to the 119 head remaining, for which entire compensation is due, the State pays 99 marks per head, as a great part of the carcases could be utilised.

If we actually add to the sum paid as compensation for each of the 40 cattle, the fifth of the value previously deducted, and subtract from the total loss the sum realised by the sale of the useful portions, we find that the real loss caused by this disease may be estimated at an average of 157 marks per head.

If we seek the average of compensation for these 159 animals, and take 100 as the basis for our calculations, we shall find that of the latter number there were, in 1879, 80 compensation cases at 99 marks, and 20 at 157 marks. The average compensation for 100 cattle may therefore be estimated at 7,920 + 3,140 = 11,060 marks, or 110 marks per head.

The total value of animals killed by order of the police wa 139 × 198 = 31,482 marks, of which 54 per cent., or 17,083 marks, has been paid by the State as compensation; the remaining 46 per cent. representing the value of the useful parts of the carcase.

It is therefore established, that if we desire to compensate without any other deduction than that justified by the sum derived from the sale of parts of the carcase, we ought, according to the theoretical statements, pay 132 marks per head; taking the accounts of the assurance societies into reckoning, this amount should be reduced to 111 marks, and according to the administrative reports, to 110 marks.

If we fix on the 132 marks per head, we should estimate the total loss with the loss to be covered, in a round sum, at 132 × 5,697 = 751,040 marks; but if we wish to have recourse to obligatory assurance, we evidently should not pay the *total* value of the animal, and the compensation ought not in this case to amount to more than about 80 per cent., as a share of the loss should fall upon the owner, to keep him from being negligent in attending to his stock.

The total value of the animals dead or killed by order of the authorities, without any deduction, amounts to ...	1,139,400 marks
Twenty per cent. of this sum, equivalent to	227,880 „
Remaining	911,520 marks.

From the latter sum should be also deducted the value of the products derived from the carcases, or 33·75 per cent. 389,400 marks.

Remaining 522,120 marks.

Divided among the bovine population of the country, these 522,120 marks represent an assessment of 85 pfennigs per head. There must be added to the 522,120 marks a sum of 10 marks for each animal dead or slaughtered, if, as is very probable, the expenses of the experts are to be paid by the assurance organisation. Ten marks for 5,697 head of cattle makes 56,970 marks, or 9 pfennigs for each bovine in the country, and this, added to the 85 pfennigs allowed to cover the cost of compensation, raises the total annual premium to insure each head of cattle to 94 pfennigs.

In our calculations we have not taken into account the expense of collecting the premiums, as we have admitted that they should be collected by the receivers of contributions, who are paid for this service whenever money is gathered as indemnity for the losses caused by any epizoötic malady; so that extending the assurances to all the losses among animals would not cause any increase in the pay of these functionaries.

To pay compensation for 159 cattle slaughtered by order of the authorities, the State would require to deduct previously the sum of 0·76 pfennig (less than a pfennig) per head of cattle. Supposing that this measure be extended to 5,697 or, in round numbers, to 6,000 cattle, there would be 28 pfennigs per head, or 37 to 38 pfennigs, including expenses.

In comparing these figures with those furnished by the assurance services, we arrive at the following conclusions:—

The annual average number of cattle insured by local societies from 1872 to 1879 was 91,818; of these the average yearly loss was 1,317, or 1·4 per cent.; and for each of the latter an average of 111 marks was paid. To cover the losses, then, it would require, in round figures, a contribution of 1 mark 60 pfennigs per head of cattle insured; and in adding to this a supplemental tax of 10 pfennigs for expenses, there is a contribution of 1 mark 70 pfennigs for each bovine.

According to the information furnished by the district veterinary surgeons in their reports, the premium which should be

paid for assurance of each head of cattle should be 95 pfennigs. From this, and also from the facts elicited by the application of the law with regard to compensation for loss of animals, the amount to be levied to carry out the compensation services would be 38 pfennigs for each bovine; calculated according to the indications shown in the assurance societies' documents, this sum should be 1 mark 70 pfennigs.

In each of these three divisions is included the expense estimated at 10 per cent. per head.

The *fifth question* is relative to the importance of the losses, considered in the different districts of the country.

The minimum and the maximum of the losses, according to the information up to date, are respectively 0·3 and 1·2 per cent. So that between the two there is a wide difference, but in the majority of the districts the losses vary in the averages; the extremes being only noted in four or five districts.

The value of the animals varies in analogous proportions in different districts. Considering the minimum rate of assurance premiums—whether 38 or 95 or 170 pfennigs per head be fixed upon—it is not convenient in an assurance society to have graduated premiums, by basing these on the differences in the gravity of the danger and the value of the animals.

The establishment of different premiums, according to the districts, does not appear to us to be justifiable, as it would be necessary in some parts to pay double the amount of assessment, because of the danger animals incur and their pecuniary value. In establishing compulsory assurance, we might accept the bases of the assurance laws of the Grand Duchy of Baden, promulgated January 30th, 1877, and March 6th, 1880.

The calculations we have made had in view *all* the losses in cattle, whether due to official or voluntary slaughter, because of disease, or from natural death. The losses which are occasioned by Tuberculosis constitute scarcely one-third of the total deaths; we may, therefore, for the Grand Duchy of Baden at least, maintain that if compensation is only allowed for cases of Tuberculosis, the assurance premium would not exceed fifty pfennigs; probably it would be less. And we should not lose sight of the fact, that after some years' experience of such a system of as-

surance, the assessments would gradually diminish, as by reducing the number of cattle affected with the disease we should also be diminishing its chances of propagation; we should even abolish these chances altogether, as they depend upon the intervention of diseased animals.

If by the application of such a measure the malady would be considerably diminished in frequency, yet we could scarcely hope for its complete disappearance, as there would always remain the possibility of its transmission from mankind to animals. These transmissions are, however, rare, and might in every case be prevented by proper measures of isolation applied to tuberculous persons.

As we have, in the introduction to this work and in the discussion of the first two questions, demonstrated that Tuberculosis is a hereditary and contagious affection, and to such an extent that no other panzoötic malady exceeds it in these two points; and as, in treating the third question, we have shown that the control and disinfection measures employed up to the present time do not give to mankind sufficient guarantees of protection against the danger of contamination by the flesh and milk of tuberculous animals, the Congress cannot, in our opinion, evade discussion of the question as to whether Tuberculosis ought, or ought not, to be classed among those diseases, the propagation of which should be combated by sanitary police measures.

If the meeting shares in our manner of looking at it, it will likewise approve, taking into account the incurability and the very frequent fatal termination of this malady, of our proposal to combat it by measures of sequestration, by the slaughter of diseased and suspected animals, as well as by the disinfection of infected places and articles.

The Congress also should agree with us in the awarding of compensation for animals affected with Tuberculosis, this compensation being likely, before everything else, to ensure the success of the other measures. And its utility is further enhanced by the fact, that the charge which its application entails, whether it falls on the treasury or cattle-owners, is very small, considering the great advantages to be derived from it.

In discussing the question relative to the injurious influence of the flesh and milk of animals affected with Tuberculosis, and in attempting to solve it, from an exclusively veterinary sanitary police point of view, the Congress will not exceed the limits of its attributes.

And in indicating the means whereby cattle may be preserved from the ever-increasing destructiveness of the scourge, the Congress will render an eminent service to all those persons who breed and trade in cattle and their products, and consequently to agriculture in general. Even without solving the question as to the transmissibility of Tuberculosis from animals to mankind, it will contribute indirectly to preserve the human species from the noxious influence which the flesh and milk of tuberculous animals might exert upon it.

The solution of this question directly touches the domain of veterinary sanitary police, properly so-called, and that of sanitary police in particular. It furnishes a radical means of satisfying, at one and the same time, the owners of cattle and the consumers of flesh and milk—a means which, we do not doubt, will be unanimously approved.

The commission entrusted with the preparatory study of the question relative to Tuberculosis, proposes to the Congress the adoption of the following resolutions :—

1. Tuberculosis is a disease transmissible by heredity.

2. It is contagious.

3. It should be classed among the affections which should be combated by sanitary police measures.

4. The measures to which recourse should be had are the following :—

(*a*) Every owner of domestic animals should be compelled to report immediately to the police authorities every case of Tuberculosis, or the appearance of any symptom which may lead him to suspect its existence ; the affected or suspected animal should be so kept apart that it cannot transmit the affection. The same obligation is incumbent on any one who takes the place of the owner of cattle, whether in a dairy, herd, pasture, or elsewhere.

Reporting the disease should be also obligatory on veterinary surgeons or other persons who professionally treat the domestic

animals, as well as on meat inspectors or others who, by business, have to do with the destruction, utilisation, or handling of carcases or the products of these, if before the intervention of the police, they discover the existence of Tuberculosis, or, by recognising its symptoms, suspect its presence.

b. The appearance of the affection should be made known publicly, and the infected locality or herd designated.

c. Suspected and diseased animals should be sequestrated, and their slaughter ordered as a police measure. Animals suspected of contamination should be kept isolated, unless they are few in number, in which case they should be slaughtered by order of the authorities. If the number is larger, they may be fattened and sent to the abattoir as soon as possible.

d. The stables or infected localities should be submitted to special police *surveillance* for a year, dating from the last case of disease. The sale of animals suspected of contamination should only be permitted if they are intended for immediate slaughter, and this operation should be attended to by a veterinary surgeon.

e. The place which had been occupied by a tuberculous animal should be cleansed and disinfected, and this should also be done when the malady has disappeared from closed stables or other localities in which diseased animals had been kept, and it should only be after disinfection that the police measures could be removed. During the existence of the panzoöty the stables should be kept properly ventilated.

f. In order that the flesh and viscera of an animal may be allowed for human consumption, the disease should be recognised (after slaughter) as only at its commencement, the lesions merely affecting a small part of the body, the lymphatic glands being still exempt from all traces of tubercles; or if tuberculous deposits are present, that these have not undergone softening; that the flesh presents all the characters of prime meat, and the general condition of the slaughtered animal was satisfactory at the moment of slaughter.

The flesh of tuberculous animals allowed to be sold as food, should be taken beyond the locality in which the animal has been slaughtered, and should not be sold at an ordinary butcher's stall.

Any quarter of meat, or any viscera showing tuberculous

lesions or changes, as well as the flesh of any other animal in which, at the autopsy, there is evidence of more marked disease than is indicated above, should be spoiled for sale by sprinkling it with petroleum, and afterwards buried under the surveillance of the police, though the extraction of fat by boiling may be authorised. The inspection of every animal affected with Tuberculosis should be made by a veterinary surgeon, who alone shall judge as to whether the meat is fit for consumption.

g. The milk of diseased or suspected animals shall not be used for human consumption, nor for that of certain animals, and its sale should be rigorously prohibited. The milk of animals suspected of contamination should only be consumed after being boiled.

h. An indemnity should be allowed, under certain reserves intended to prevent abuses, for cattle killed by order, in consequence of Tuberculosis, as well as for those which have died of the disease, and for those recognised as tuberculous after slaughter for food. The indemnity may be paid out of the public treasury, or by compulsory assurance organisations.

i. Infractions of the preventive and repressive measures should be punishable.

j. To protect the public health from the dangers by which it is threatened through the possible consumption of the flesh of tuberculous animals, or damaged or putrid meat, in every district a competent service for meat inspection should be instituted.

k. Establishments which are specially set apart to provide milk for sick people or infants, should be under permanent control, and have their milch cows submitted to the inspection of veterinary surgeons officially appointed.

In recommending to the Congress the adoption of these resolutions, we do not think we have exceeded the limits of the *necessary propositions*, if it is desired to get rid of the danger which has for a long time threatened the interests of cattle-owners, as well as the health of consumers, and is a real calamity.

(The foregoing report was, unfortunately, not brought on for discussion until the last day of the International Congress. Though the question of Tuberculosis was considered one of the most important, if not *the* most important, that could be ex-

amined at such a meeting, yet as it had been placed last on the list of subjects, and those which had preceded it had occupied so much time, there was at one period a proposition to defer its consideration until the next International Congress, to be held in Paris.

One speaker, in admitting that the question was not yet sufficiently ripe for discussion from a *scientific* point of view, thought that, nevertheless, it might be examined in a *practical* sense, and insisted that the Congress should decide whether it was prudent to abstain from eating the flesh of tuberculous animals. Another speaker was of opinion that the question as to whether such flesh should be consumed as food was a purely medical one, and added that at the last Congress held in Germany a decision was not arrived at for this reason. A third speaker said it was not possible to temporise in such a matter. Lyons, of which he was a delegate at the Congress, was waiting for a decided opinion on this question. In a practical point of view, there could be distinguished a *generalised Tuberculosis* and a *localised Tuberculosis;* he wished to know what should be done in one and the other case.

The President suggested that there should be a solution of the question, and the following proposition was put forward:—"Considering that it is indispensable that the Congress should give an opinion relative to Tuberculosis in connection with meat inspection, the undersigned demand that the Congress should declare that it is useful to fix the cases in which animals may be rejected or accepted as food for the public."

Lydtin said that in the Grand Duchy of Baden, a law was sought for to regulate the measures necessary to deal with the disease, and that he and others had examined this important question. For centuries there had been regulations with regard to the malady. The flesh of diseased animals had been divided into three classes: Flesh of the first quality, which might be sold without restriction; flesh of the second quality, which could only be sold in certain places as low-priced meat; and flesh of the third quality, which was seized and buried. He referred to the diagnosis of the malady, and asserted that it was no more difficult than Glanders, especially when the latter was in an

occult or latent form. The existence of Tuberculosis is easily ascertained in the dead animal, notwithstanding the numerous kinds of alterations it might present. Everywhere are found traces of the influence of a foreign agent which has produced lesions wherever it has been deposited. There is no absolute characteristic of the disease; but a recent and very important discovery has thrown great light on the question, and given us, it may be said, a *criterium* of Tuberculosis. The presence of particular germs, the *bacilli* of Koch, revealed by means of the microscope, will eventually decide the question in doubtful cases. The disease was very widespread, and everywhere it had assumed considerable proportions. The cause was heredity and contagion. Its contagiousness had been accepted, then denied, for many centuries, but experimentation had finally proved its infectious character. The virulent agent enters the organism by means of the lymphatic vessels, and is slowly propagated. The lesions caused by the tubercular germs are at first localised and, as it were, isolated in the neighbouring tissues; then step by step they invade the organism; at the same time the oldest lesions undergo successive transformations: at first they are in the condition of crude tubercles, then they become caseous, purulent, and cretaceous.

The generalisation of the lesions is slow, and several stages in their progress may often be remarked in the same carcase. Sometimes the tubercles are localised, and the flesh has a good appearance. There is nothing to prove that this flesh is hurtful to the consumer, no accident from its use having yet been reported. When the tubercles are diffused throughout the body, and the lymphatic channels are more or less involved, it may then be asserted that the flesh is dangerous, or at least unhealthy as food. In Germany it is classed among inferior flesh, sold apart as diseased meat, and the public are therefore warned against it. At other times there are purulent or caseous centres, softened tubercles; and in this case the flesh should certainly be rejected, as also in those cases in which the disease is generalised, a large number of lymphatic glands are affected, or the carcase is in an emaciated condition, showing that nutrition had been profoundly altered during life. He proposed that paragraph *f*

(resolution 4) of the report be adopted, so far as the consumption of the flesh of tuberculous animals is concerned.

M. BOULEY: The question now before us constitutes one of the greatest difficulties met with in practice. It is asked what the meat inspector should do with the carcase of a tuberculous animal. But it is a fact that Tuberculosis is a dangerous disease for animals, which may contract it not only by the respiratory passages, but also by digestive ingestion, as well as by inoculation in any part of the body. He referred to the Toussaint experiments, the results of which were startling. The virulent element did not exist in the tuberculous lesions only, but was present in all the tissues. The juice of the flesh of a tuberculous animal, even after being heated to 50° or 60°—the ordinary temperature of roast beef—was virulent to the ox, pig, cat, rabbit, etc., when given in a virulent or small dose; large doses were not necessary. In putting the question to its ultimate consequences, it was not necessary to establish degrees in Tuberculosis, as when it exists it renders the consumption of the flesh dangerous. He was convinced that Tuberculosis, no matter the degree to which it had attained objectively, should cause the rejection of the flesh; at the most it should only be utilised when well cooked. Human Tuberculosis is certainly contagious; this is a fact known to everybody. Transmission takes place principally from husband to wife, and perhaps kissing is one of the conditions of contagion, through the medium of infected saliva. Tuberculosis is too widespread at present; it affects one-fifth of the population. He considered that it was in the butcher's department that one of the principal causes of the large number of cases of this disease was to be sought; it is probable that infection occurred through the digestive organs, as in the laboratory experiments. In conclusion, he proposed the following amendment:—

"Tuberculosis being recognised, experimentally, as a malady transmissible through the digestive organs and by inoculation, the Congress declares that there is every reason to reject for human consumption the flesh of tuberculous animals, no matter to what extent these may be affected, nor what the apparent quality of the meat may be."

He was of opinion that the owners should be compensated, and thought butchers should establish mutual assurance societies.

VAN HERTSEN: This speaker explained what had been done in Belgium with regard to this disease, and especially the procedure he had adopted at the Brussels abattoir, when he had to deal with tuberculous cattle. These measures had been in operation for a very long time. In 1869 he had made them known in a work presented to the Veterinary Society of the Eure and Seine, and which had received the prize of that society. At that period he had arrived at almost the same conclusions as those in the report. At Brussels all emaciated cattle are confiscated, as well as the carcase of every animal showing numerous generalised tubercles undergoing softening, caseation, or suppuration—which lead to the supposition that the whole of

the organism is infected. When the lesions are serious and multiple, no matter what the quality of the meat may be, the carcase is always seized; but when the tubercles are localised and in the crude state, and the flesh is satisfactory from a nutritive point of view, it is allowed to be consumed.

This practice had been established since 1869. With regard to the danger arising from the consumption of unboiled milk, he referred to a work he and Professor Degive had presented to the Belgium Academy of Medicine, and he dwelt more particularly upon the considerable frequency of tuberculous lesions in the udder of milch cows—a fact which he had made known in 1868, but which had not received any attention, not even from doctors or veterinary surgeons, and no measures had been devised; the Academy had risen without discussing the important hygienic question he had submitted to it.

WIRTZ proposed an amendment to the resolution, to the effect that instead of "only a small portion of the body; that the lymphatic glands show," it should be "that a portion of the thoracic and abdominal viscera; that the lymphatic glands which do not form part of these organs," etc.

VAN HERTSEN was of opinion that Tuberculosis may have invaded the lymphatic system at the commencement of the disease. For his own part, he had noticed that the gland situated between the first and second rib was tuberculous in eight out of ten cases, and so far as meat inspection is concerned this gland was of very great importance, as he had found it to be tuberculous without requiring to see the other viscera. It was of great assistance in distinguishing Tuberculosis from Contagious Pleuro-pneumonia in quarters of meat when the pleura had been removed; and for this reason he had designated it the inspector's gland.

LYDTIN maintained the necessity for retaining the proposition of the report. His views differed but little from those of Bouley, and he believed that with the proposed system a large number of tuberculous cattle would be rejected for consumption. Bouley would allow the sale of certain kinds of flesh, provided that this should be well-cooked, and he thought this would be sufficient. He agreed with Bouley that butchers should establish mutual assurance societies, and cattle-owners should be compensated. Without compensation they could not be sufficiently rigorous.

BOULEY wished to submit his amendment to the vote of the Congress, with a view to establishing the principle, which, in his opinion, should be most rigorous and absolute. With regard to regulations, that was an affair of competent administration.

ROSSIGNOL proposed an amendment which he subsequently withdrew in favour of that of Bouley. It was to the effect that "every animal killed for food, which shows lesions of Tuberculosis, should be seized as absolutely unfit for consumption. The carcase should be immediately rendered unfit for food by means of petroleum, and treated with sulphuric acid, or submitted to prolonged boiling in the cauldron of a knacker."

VAN HERTSEN proposed to remove from paragraph *f* the words "that the lymphatic glands are yet exempt from every lesion of Tuberculosis."

The first part of the paragraph was accepted by twenty-five votes and fourteen abstentions. The second part obtained fifteen votes for and fourteen against, nine abstaining. As a consequence of this vote, the amendment of Wirtz and that of Van Hertsen were lost. Several members desired to put paragraph *g* to the vote.

ROSSIGNOL did not wish to be so rigorous as Lydtin ; he would not reject the milk of animals suspected of contamination ; consequently, he would have the last phrase in paragraph *g* suppressed.

BOULEY supported this proposal.

LYDTIN said it was only a recommendation ; he thought the milk should be boiled before it was consumed. He could not accept Rossignol's proposition.

The paragraph *g* thus modified was put to the vote and carried, with only five dissentients.

BOULEY demanded a vote on paragraph *h*, which he proposed to modify as follows :—"Compensation should be given for cattle in good condition, which, after slaughter for food, are found to be tuberculous."

ROSSIGNOL was in favour of compensation for animals in good condition intended only for food.

AERTS considered compensation as a just measure when slaughter was compulsory.

WEHENKEL said that as they were only discussing the seizure of meat unfit for consumption, and not of a measure which would wrong the owner in protecting the general welfare, he could not support the proposal to give compensation. It was a question of merchandise of bad quality, the use of which was to be prevented ; nothing more. The State should not intervene. Compensation should only be given in cases where a cattle-owner, for the general good, is deprived of the chance of curing his diseased animal (compulsory slaughter in order to prevent the spread of a disease), or when the legal sale of goods is interdicted for the general benefit ; but an indemnity ought not to be awarded when it is sought to prevent the unlawful sale of diseased meat.

LYDTIN took the same view as Wehenkel, as it was the one which was acted upon in the Grand Duchy of Baden.

As there was no further time to examine this subject, the discussion terminated, the following being a *résumé* of the resolutions adopted by the Congress with regard to it :—

In order that the flesh and viscera of the animal be allowed for consumption, the disease should only be in its earliest stage,

the lesions confined to a small portion of the body, the lymphatic glands yet free from alteration of a tuberculous character, the tuberculous centres not softened, the meat healthy and of the first quality, and the general nutrition of the animal at the time of slaughter leaving nothing to be desired.

The flesh of tuberculous animals intended for food should not be conveyed beyond the locality in which slaughter has been effected, nor offered for sale at the stall of an ordinary butcher.

Every quarter of meat, and any viscera showing tuberculous lesions or transformations, as well as the flesh of every animal in which signs of more advanced tubercular infection are found than those above-mentioned, should be rendered unsaleable by sprinkling them with petroleum, and finally buried, under the surveillance of the police. The extraction of the tallow by boiling, as well as the sale of the skin, may be permitted.

The inspection of every animal affected with Tuberculosis should be made by a veterinary surgeon, who alone can judge whether the flesh may be consumed.

The milk of animals affected with, or suspected of Tuberculosis, should not be used for the food of man, nor yet of certain animals, and its sale should be rigorously prohibited.

Editorial.

TO OUR PROFESSIONAL RECRUITS.

THE approaching opening of the Veterinary Schools for the winter term affords an opportunity, which we have hitherto seldom availed ourselves of, to address a few words of advice and encouragement to those about to commence their studies at these sources of initiatory knowledge, in the hope and earnest expectation of becoming members of the veterinary corporation when, as the result of their labours, they have acquired a sufficiency of learning to enable the Examiners of that body to certify as to their fitness to successfully practise the art and science of Veterinary Surgery and Medicine. And we venture to do this from the position we occupy as representing the profession—however unworthily and inefficiently—in public estimation, from the neutral ground we are happily enabled to retain in the midst of competition and conflicting interests, and from the many too short years of pleasurable toil and anxious care we have devoted to the advancement of this important branch of the healing art.

The students of to-day stand on a somewhat different platform to their predecessors of a half, or even a quarter, of a century ago. The immense

strides made in pathology and therapeutics, and perhaps in a lesser degree in physiology, histology, and surgery, as well as the increase in the collateral sciences which minister to these, entail a greater amount of study and labour than were required in days gone by; while the demands made upon the skill and resources of the practitioner are much more exacting than was the case within the memory of the present generation. But, to compensate for this, the period of study has been considerably lengthened, the means for acquiring the extended knowledge are proportionately increased, and new methods have been introduced for rendering its acquirement more easy. For the student of the present day a good general education is an absolute necessity, if he is to make the most of the opportunities offered him for laying a solid foundation in the principles of the profession which he seeks to enter. It is not long since this was not considered a very important matter, and if a student had some trifling acquaintance with the very elements of education, such as is now possessed by a schoolboy not in his teens, it was deemed quite sufficient to enable him to acquire all that was comprehended in the designation of veterinary surgeon. For several reasons this was unfortunate, as there is no doubt that it greatly retarded the prosperity of the profession; but from the circumstances of the times there was no help for it. The student of to-day should be educated to such an extent that he can readily comprehend the language of science, and he should even have some notion of the elements of physics, in order to understand the teachings of anatomy, physiology, and pathology; and inasmuch as the veterinary art is most difficult to practise, it demands powers of close observation and reasoning, no less than physical strength, tact, and an innate love of animals. Though it might be said of the veterinary surgeon as of the poet, that "he is born, not made," yet it is possible to become an able practitioner by the exercise of close application and perseverance, without being endowed, perhaps, with all the natural qualities which are supposed to be necessary.

Next to a good general education, the student should be familiar with the handling and management of the domesticated animals, and if he has had the advantage of gaining this familiarity in his earlier years, all the better. In nothing does the practice of human differ more widely from veterinary medicine and surgery, than in the kind of patients dealt with.

The veterinary surgeon's patients comprise several species, very dissimilar in organization, size, disposition, and expression: creatures whose reasoning powers are still disputed, who cannot be reasoned with or soothed while under restraint or the infliction of pain, except by physical coercion, and whose resentment is dangerous to the surgeon when performing operations which are intended to relieve them from suffering; and who, being dumb, cannot assist in forming a diagnosis, or tell what they experience or where they suffer. Besides, he cannot command position in his surgical or medical cases, like his colleague, whose patients can tell, describe, obey, and resignedly endure, be placed in any necessary position, and, besides, are of his own species, and therefore perfectly familiar to him from his earliest days. There are other differences which operate adversely against the veterinary surgeon and in favour of the surgeon;

but all of these render the studies of the former more difficult. True, animal life is not so sacred or valuable as human life, but that does not render the study or the practice of veterinary surgery any easier; on the contrary, it often renders it less satisfactory and more discouraging.

Each branch of medical science has its advantages and disadvantages, and each demands special training; but of the two, to be a fully competent veterinary surgeon, and to successfully overcome all the difficulties which have to be encountered, requires more ability, resource, and perseverance than perhaps need be expected in the surgeon. It is much easier for the former to assume the *rôle* of the latter on an emergency, than for the surgeon to undertake the treatment of a sick or injured animal without any previous training. It is notorious that the most skilled surgeon or physician finds himself utterly lost when confronted with a case of lameness or internal disease in a horse or cow.

These remarks are made for the purpose of impressing upon veterinary students the urgent need there is for steady and continuous application to their studies, in order to gain a thorough knowledge of the first principles of animal medicine. The task before them is no light one, and the time in which it has to be accomplished is not a moment too long. Many students are only too ready to waste the earlier period of studentship, on the plea that there is no necessity for settling down seriously to work until later on; hence, they defer the study of important subjects, or examine them in a perfunctory and intermittent manner, until too late to fully comprehend them; or they "get them up" solely with the view of passing an examination in them, and then throwing them to one side. This is a grievous blunder. Every subject which enters into the curriculum of the schools is of more or less importance to the practitioner in his every-day work, and not one of them can be dispensed with or treated with indifference. A knowledge of them forms the veterinary surgeon's stock-in-trade, his working capital; and he is rich and competent in proportion to the amount of this capital he may possess. Students go to veterinary schools, not to prepare themselves merely to pass certain examinations, but to lay in a certain stock of knowledge which is to give them a start in a calling that, if they are to be worthy of it and adorn it, will make severe demands upon them so long as they pursue it. To obtain the diploma of the Royal College of Veterinary Surgeons is no guarantee of success in after life; it is simply a passport to public favour—a certificate that the holder thereof knows sufficient of his business to be able to practise it satisfactorily. This is certainly valuable so far as it goes, but if the knowledge has only been picked up to obtain this testimony, and then wholly or partially thrown away, the success gained can have but an ephemeral existence, and the graduate will make no position for himself; on the contrary, he will experience little else than dissatisfaction and discomfiture. So imbued do some students become with the notion that what they learn at college is merely to enable them to get through certain examinations, that when they have passed in some subjects they think no more about them, and in a few months afterwards, when casually questioned upon them, their minds are found to be a perfect blank with regard to them. We have had frequent and painful evidence

of this fact; and we would earnestly solicit students to consider what it must lead to when they enter the world as duly qualified men, supposing they should be so unfortunate as to "get through" the Royal College, and figure in public as one of its members. Another fallacy is as to the value of lectures in enabling students to become good practitioners. They are useful, especially when the lecturer is master of his subject and can impart some of his knowledge to others; but they are only partial means to an end, and the student in this, as in many other things, must look upon them as merely so many hints which he must store away in his memory, think over, and test and apply whenever and wherever he has the opportunity. A student cannot become a real veterinary surgeon by sitting on a bench listening to lectures; his knowledge and skill have to be applied, and this application demands head and hands—in fact, special cultivation of all the faculties; and the best cultivator of these, by far, is the student himself. There is no royal road to the knowledge a veterinary surgeon should possess; it is to be attained by patient plodding along, looking neither to the right nor the left, but ever gaining ground by fixing the gaze forward and upward, surmounting all obstacles, and reaching the goal on the summit at last, conscious of having surveyed and indelibly imprinted on his mind every step of the toilsome journey. "A man is relieved and gay when he has put his heart into his work and done his best," truly says Emerson. Economy of time is an essential to successful study, and it should ever be kept in view. The late Premier of England, Mr. Gladstone, insists upon its observance: "Thrift of time," he repeats, "will repay you in after life with a usury of profit beyond your most sanguine dreams"; and with this and steady application, even what may be designated a dull student has not much need to be apprehensive of failure. No one can deny the justness of Bulwer Lytton's statement that "what men want is not talent, it is purpose—in other words, not the power to achieve, but the will to labour"; while, with regard to failure, the words of the same writer, which he puts into the mouth of one of his best dramatic characters, Richelieu, in his address to his page, should be remembered—

> "In the lexicon of youth, which Fate reserves
> For a bright manhood, there is no such word
> As Fail!"

Possessed of a good general education, health and strength, determined to acquire knowledge and make it his own—a part of his being—and conducting himself as befits one who aspires to become a member of a profession which has much to commend it, and which has a good future before, the student of to-day has opportunities for distinguishing himself which many of those who have risen to eminence did not have. Upon themselves largely depends their success—

> "For sluggard's brow the laurel never grows;"

and if they desire to win the laurel, they must work and deserve it.

"QUARTER ILL," OR "BLACK LEG."*

France.—Chaubert described the disease last century as an anthracoid disease. *Germany.*—Bollinger distinguishes the disease from Anthrax, and regards it as specific, due to a mobile organism (*Spaltpilze*) of a most dangerous character; while Feser considers it a septic infective disease, and describes the micro-organism. They propose the term "Emphysema Infectiosum" for the disease.

The symptoms obtained experimentally upon rodents are pretty constant, and very similar to those described by others in cattle.

The period which elapses between inoculation and death varies within rather wide limits, viz., from twelve hours in the most severe cases to three, or even four, days. This depends upon two factors: (*a*) the virulence of the matter used for inoculation; (*b*) the susceptibility of the animal to infection, or its constitutional power of resistance. After inoculation, the rectal temperature rises to 103° or 104° F., and falls to 90° before death, which usually takes place without any restlessness or convulsive struggles. The period that elapses between infection and death is frequently proportionate to the quantity of the virus injected, whereas both in Anthrax and in Davaine's Septicæmia in rodents, the quantity used in inoculation—within very wide limits—is practically without effect on the period of incubation.

Experiment.—Four guinea-pigs—A, B, C, and D—received by injection into the crural muscles, with a Pravaz syringe, each five drops of the expressed muscle serum of an animal recently dead, respectively of the following dilutions, viz., A, $\frac{1}{2}$; B, $\frac{1}{10}$; C, $\frac{1}{100}$; and D, $\frac{1}{1000}$. They died in the following manner:—A succumbed within (*i.e.*, was found dead in) eight hours; B, at that time not appreciably affected, twenty-five hours after injection was in a state of collapse, and was found dead the following morning; C, then unaffected, was found dead on the third morning—all three showing typical symptoms; whilst D survived, and was ultimately killed. The result here—viz., $\frac{1}{20}$th of a drop proved in C fatally infective—is about the limit of infectivity which I have found the virus of this disease to possess.

The virus injected into the muscular tissue of the upper and lower limbs is most certainly infective, and the muscular tissue is that principally affected. The microbes are found in the serous infiltration and in the sarcolemma of the muscle. Emphysema is always present, but not so extensively in winter as in summer; thus showing the effect of season in modifying the character of diseases of this class.

Sometimes Peritonitis is present, with serous exudation containing the organism, and is infective. The spleen is always normal, and contains no microphytes; neither does the liver nor bile. Nor is this fluid infective, although M. Arloing says it is the most virulent of the fluids of the body, inoculation with a few drops of it being invariably fatal in twenty-four hours. Further, the bile frequently inoculated into cultivating fluids, and kept in vacuo, invariably remained sterile. The blood from the heart, examined shortly after death, is never materially altered, the red corpuscles preserving their character. The lungs are healthy, except in cases where the injection has been made in an upper (fore) limb, when they may be hyperæmic. Microscopically, the small blood-vessels, arterioles, and veinlets in the subcutaneous tissue and muscle may be seen ruptured; this is best observed in specimens hardened in strong alcohol (90 per cent). It appears that stasis

* A Résumé of some experiments published in the 13th Annual Report of the Medical Officer, Local Government Board, on the Ætiology of "*Charbon Symptomatique*," and its relation to other allied diseases, by G. F. Dowdeswell, M.A. (Cantab.), F.L.S., F.C.S., etc.

is occasioned by injury to the vessel walls, through the intense inflammation that is set up, and the rupture occurs as a consequence.

The pathological appearances and cause of death are explained as follows:—Inflammation is excited in the locality by the injection of the "infective" material, resulting in stasis; this is followed by atrophy and necrosis of the adjacent tissues, rapidly spreading to distant parts of the organism. This appears naturally to account for the features of this affection, quite consistently with the secondary rôle played by the micro organisms, which here act either by generally deoxydising the blood, or, as shown by Toussaint, by mechanically plugging the capillaries.

Infectivity of the blood and other fluids.—The power of the blood to infect cultivated fluids and animals is very uncertain. In numerous experiments with the blood taken shortly after death directly from the heart, a very few only were successful; but when an interval of twenty-four hours was allowed to elapse (especially if the dead animal be placed in an incubator) it is found more infective. However, the serum from the muscle and the œdematous fluid were invariably infective, even in such small doses as three drops (0.2 c.mn.), injected directly into the muscular tissue; but smaller quantities were uncertain, death only occurring after a proportionately lengthened period. If injected into the subcutaneous tissue only, infection invariably failed; although M. Arloing states the injection into this tissue confers immunity from subsequent infection. Mr. Dowdeswell cannot, however, endorse this statement.

Another point of note is the fact that in a series of experiments extending over two months, and comprising upwards of twenty-four successive inoculations, he found there was no constant or progressive increase or diminution in the virulence of the infection, as has been said to be the case in transmitting it through rodents.

The action of the virus varied, but it was invariably found to be directly proportionate to the severity of the case from which it was taken, and this chiefly depended on the animal infected; so that by inoculating two or more animals at the same time, and selecting the most severe cases to furnish the virus—not always that which succumbed first—the infectivity could be regulated. In the very last inoculations made, the virus was fully as active as ever, though a short time previously it had been in some cases rather diminished.

Toxical properties of the flesh of infected animals.—In the case of rodents, it was found that the flesh of infected animals—*i.e.*, the tissues of the parts affected—was distinctly toxical to others of the same species, when eaten.

The micro-organisms which occur in the tissues, and their artificial cultivation.—Few organisms can be found in the blood immediately after death, but they increase afterwards at a rate proportionate to the temperature. Their form is that of a large bacillus, regularly cylindrical, width from 0·0008—0·0013 mm—distinctly larger than the B. Anthracis in a similar media; in length the single rods are from 0·004 to 0·010 mm. In fresh preparations—more commonly than in those dried and stained—two or three of these segments are sometimes found united together; but not more than that, even twenty-four hours after death, in animals kept at the temperature of the external air. When, however, they are placed in the incubator for a night after death, then several clavate and ovoid or fusiform cells develop and form spores, similar to those that occur in the serous infiltration. According to Mr. Dowdeswell's observation, the microphytes never develop in the blood, excepting when so placed in the incubator—a feature which alone would serve to distinguish this disease from Anthrax. The numbers in which they are present, depend simply upon the time which has elapsed and the temperature.

They are found in large numbers in the serous infiltration around the site of injection, and to a considerable distance throughout the muscular and connective tissue, and vary in size and form—cylindrical cells similar to those found in the blood, bacterial or coccus-like forms undergoing fission, and, in the connective tissue and serous exudate, clavate and fusiform or ovoid forms, with all gradations intermediate between them. The microbes found in the muscular tissue resemble those found in the blood, viz., large, broad, cylindrical rods, generally lying parallel to the direction of the muscular fibre.

The fusiform or ovoid bodies sometimes reach a diameter of 0·0025 mm., *i.e.*, three times the size of the B. Anthracis; their length varies from little more than half as much as their diameter. The central part of the corpuscle, ovoid in form, is unstained by the aniline dyes, and is very highly refractive. These are probably resting spores formed in the last phase of the life cycle of the organism, whilst the corpuscles observed in the cylindrical rods, or at their ends, may be spores of the negative kind.

The best medium for cultivation was found to be neutral veal bouillon with the addition of 4 per cent. of glycerine, and an incubator kept at 38° C.

The action of the aromatic products of putrefaction on the virus.—Neither phenylpropionic nor phenylactic acid, nor their potash salts, even when added to the virus in as large proportions as possible, and allowed to act upon it for one or two days, were capable of materially or constantly modifying its activity.

Upon the attenuation of the virus, and methods of conferring immunity from infection.—Mr. Dowdeswell finishes by saying:—"Considering the prevalence of this disease amongst sheep and cattle in this country and the colonies, it appears most desirable that the methods of obtaining protective inoculation should be completely investigated. The admirable work of MM. Arloing, Cornevin, and Thomas, confirmed, in most essential points, by my own limited experiments, must be regarded as showing that this is practicable by various methods, of which that by dilution of the virus appears to be most suitable for general practice. The methods by heat, the action of antiseptics, cutaneous or other injections, are more difficult and complicated; they require special appliances or manipulative skill, and could not be so generally practised."

Distinction between Symptomatic Charbon and Anthrax.—The experiments were confined to guinea-pigs; therefore the remarks refer only to these animals:—

1. The length of time which elapses between infection and death in Anthrax is forty hours or more, whereas in S. Charbon it usually takes place within twenty-four, sometimes thirty, and, in exceptional cases, it is prolonged to forty hours.

2. In Anthrax the blood teems with immobile bacilli, having a constant form and size, and it is essentially the seat and source of infection; whereas in S. Charbon these short "primitive" segments are rarely found, and their ends are rounded; they differ also in width.

3. The spleen is never affected, nor are the organisms found in its blood in S. Charbon. The reverse is the case in Anthrax.

4. In Anthrax the red corpuscles lose their individuality, their distinctive contours, and flow together; but in S. Charbon they remain unaltered.

5. In Anthrax the white corpuscles are increased in number, but this is not a constant characteristic in S. Charbon.

6. In Anthrax the blood is invariably fatally infective, even in the 100-millionth of a drop, whereas in S. Charbon it is only exceptionally infective in any moderate quantity, and the serous infiltration, which is the most virulent, is seldom actively infective in much less than one drop.

7. The Bacillus Anthracis is essentially aërobic, assimilating oxygen with avidity, and germinates in a variety of nutrient fluids, and it is virulent in endless succession. The organism of S. Charbon, on the other hand, is cultivated more readily *in vacuo*, and the cultivations are with difficulty infective to living animals, and not at all in minimal quantities or in successive generations.

8. The B. Anthracis may be found in all the organs and tissues of the body, whereas in the other affection it is not so.

Mr. Dowdeswell finishes his paper by describing the *Relations of Symptomatic Charbon to Pasteur's Septichæmia*, and concludes: (1) That S. Charbon, though totally distinct from Anthrax, is very closely related to the so-called Pasteur's Septichæmia, and appears to be a mere modification or variety of the same disease; (2). It is not yet conclusively shown to be truly a specific micro-parasitical affection in which the microbe present constitutes the actual contagium. GEO. A. BANHAM, F.R.C.V.S.

BURSÆ MUCOSÆ.

BY PROFESSOR F. EICHBAUM, OF GIESSEN.

(*Continued from page* 202.)

V.—POSTERIOR EXTREMITIES.

In the Region of the Hips.

Bursa mucosa subcutanea on the Trochanter minor externus (Unteren umdreher). It has been seen in one instance, the horse being the subject of Spavin. It was very large.

Bursa mucosa subfascialis under the fascia covering the muscle of the croup and the Trochanter major, between the flattened tendon of the M. gluteus (externus, *Percivall*) (maximus) and the fleshy part of the anterior head of the M. biceps femoris. It is about the size of a hen's egg, and is frequently pierced by tendinous fibres; tolerably constant.

Bursa mucosa subtendinosæ under the insertion tendon of the superficial gluteus (Gluteus externus, *Percivall*) (M. gluteus maximus) on the Trochanter minor externus; not constant—***Bursa Trochanterica prof. sine glutæi maximi.***

Bursa mucosa under the insertion tendon of the middle gluteus (M. gluteus medius, or Gluteus maximus of *Percivall*)—Bursa glutæi medii. Is a large sac covering the whole of the smooth part of the infero-anterior part of the Trochanter major (Mitteleren umdrehers) under the insertion tendon of the middle gluteus. Traumatic inflammation of this bursa gives rise to hip-lameness (*cfr.* Dieckerhoff, l. c. s. 178). It corresponds to the Bursa glutæi medii, and not, as Franck says (l. c. s. 446), to the Bursa glutæi minimi of man.

Bursa mucosa under the insertion of the deep gluteal (M. glutæus minimi or gluteus internus of *Percivall*)—Bursa glutæi minimi. It is not always present, but when it is it is situated under the above-mentioned tendon and on the internal surface of the anterior part of the Trochanter major. It is oval in shape (4 ctm. diameter), and its walls are pierced by numerous vessels which grow through into the bone beneath.

Bursa mucosa about the size of a walnut between the internal surface of the crest of the Trochanter major and the posterior border of the deep gluteus muscle. It is frequently met with, and is usually surrounded by fat.

Bursa mucosa under the superior (external) origin of the M. rectus femoris, on the ilium immediately over the hip-joint. It is always present, and about the size of a walnut.

Bursa vaginalis under the tendon of the M. obturator internus—B. tendinis obturatoris interni. It commences about 3 ctm. anterior to where the muscle passes over the bone at the posterior ischiatic notch (Incisura ischiadica minor); it there surrounds the tendon as a sheath, is placed on the internal surface of the tendon as it passes over the notch, and ends 3-4 ctm. under the same.

Bursa mucosa on the tuberosity of the ischium—Bursa tuberis ischii—between this and the superior head of the M. semitendinosus (Rotator tibialis, *Percivall*). It is usually present, and about the size of a walnut. According to Renner, this bursa is produced by the action of Stringhalt, being the result of the excessive friction of the semitendinosus over the bone at this point (*cfr.* Dieckerhoff, l. c. s. 162). As this bursa was invariably present in our examinations it seems very doubtful whether Stringhalt action alone is the cause of this bursa being present.

Bursa mucosa between the posterior surface of the inferior trochanter and the tendonous branch of the M. biceps femoris, which is inserted into it. It is about the size of a walnut, is sometimes pierced by fibrous bands, and is usually present.

In the Region of the Patella.

ANTERIOR SURFACE.—*Bursa mucosa subcutanea* on the anterior part of the patella—Bursa mucosa præpatellaris sine aponeurotica. This bursa was only present in about half the number of subjects examined. It is placed on the most prominent part of the anterior part of the patella, viz., its superior part, inclined to the external border. It varies in size from a bean to a walnut.

Bursa mucosa subtendinosa on the antero-superior part of the patella, under the insertion of the M. rectus femoris. It is not constant, and usually about the size of a walnut. It corresponds to the Bursa mucosa patellaris profunda s. infrapatellaris s. subtendinosa of man.

Bursa mucosa between the insertion of M. vastus externus and the external lateral ligament of the patella. It is about the size of a walnut and is very frequently present.

Bursa mucosa more anteriorly placed than the last-mentioned, under the insertion of the anterior portion of the M. triceps femoris (M. biceps femoris). Almost constantly found, and about the size of a walnut; sometimes, however, instead of one there are two or three smaller ones.

Bursa mucosa between the internal border of the patella and the insertion of the M. vastus internus. Its size is that of a hazel-nut, and it frequently has tendinous fibres running across it.

Bursa mucosa under the central straight ligament of the patella, where it joins the tibia—Bursa subpatellaris s. infragenualis of man. It is tolerably extensive, and fills the fossa on the supro-anterior part of the tibia. The anterior wall is united to the ligament, and the superior and lateral walls are covered with fat.

Finally, we would mention a *cul-de-sac* extending from the capsule of the femero-tibial articulation; it corresponds to the Recessus superior of the knee-joint of man, and may be looked upon as a *Bursa synovialis*. It is placed above the patella, between the M. cruralis and the inferior end of the anterior part of the femur, and passes—in the horse—without any marked boundary into the joint capsule. I was only fortunate enough in one instance to detect any analogue of the rare Bursa supra-genualis s. subcruralis of man in the horse. It is situated in the depression between the condyles of the femur as an extension of the patella joint capsule; it is about the size of a hazel-nut, and unites with the joint capsule itself by means of an opening about the size of a pea.

LATERAL SURFACE.—*Bursa synovialis* under the origin of the tendinous portion of the Flexor metatarsi and the Extensor pedis. The bursa is about 14 ctm. long, and is placed in the external fossa on the anterior part of the superior head of the tibia. It commences where the above-named muscles arise on the outer condyle of the femur, anterior to the external lateral ligament of the femero-tibial articulation, and is usually in communication with the superior and inferior division of the joint capsule by wide openings at this part. The bursa then passes into the above-named fossa on the tibia, and here lies between the muscular portion of the flexor of the metatarsus (M. tibialis anticus) on the one side, and the tendinous portion of the Flexor metatarsi and Extensor pedis on the other, and is united to both by loose connective tissue. The anterior wall is united to the fascia.

That part of the bursa which is in relation with the femero tibial articulation is frequently divided into external and internal (lateral and medial) spaces by a semilunar membranous septum, which takes its origin from the border of the semilunar articular cartilages, and sometimes extends to the inferior border of the fossa covered with cartilage, on the superior border of the tibia.

Bursa synovialis under the tendon of the M. popliteus—Bursa synovialis poplitea of man. It is a projection of the joint capsule, covered by the tendon, on the borders of which it is inserted. It communicates by an opening with the superior part of the joint-space. The bursa commences with the tendon, and extends to the level with the external tuberosity on the tibia.

Bursa mucosa under the external lateral ligament of the femero-tibial articulation. One, about the size of a walnut, is situated under the superior half of the ligament, between it and the tendon of the M. popliteus; the other is under the lower half of the ligament between this and the head of the fibula, and it is smaller than the former. In no instance could any communication be detected between either of these and the joint; therefore we venture to suggest that Franck (l. c. s. 333) has confounded this with the bursa under the internal (medialen) lateral ligament.

INTERNAL (*medialen*) SURFACE.—*Bursa mucosa* under the inferior part of the internal lateral ligament of the femero-tibial articulation. This oval-shaped bursa commences at the superior border of the internal semilunar intermediary cartilage; then it passes downwards under the ligament, over the joint and border of tibia, and ends immediately before the insertion of the lateral ligament. In length it is about 3 or 4 ctm.; its breadth corresponds to that of the ligament. It communicates with the inferior part of the joint capsule by an opening from 1·5-2·0 ctm. broad.

Bursa mucosa about the size of a bean, between the crucial ligaments. It communicates with the synovial capsule by a small opening on its anterior border.

Bursa mucosa under the insertion tendon of the M. semitendinosus (Rotators tibialis), on the crest of the tibia—Bursa genualis of man. It is constantly present, and round in shape, with a diameter of 2·5-3·0 ctm.

In the Region of the Tarsus.

Subcutaneous and Subfascial Mucous Bursæ.

Bursa mucosa subcutanea over the Tuberositus calcanei. Not constant, but very frequently present. It commences about the insertion of the tendon Achilles, and passes downwards over the perforatus tendon. It is usually oval in shape, the long axis being 4 5 ctm., its short 3-4 ctm.

Bursa mucosa subcutanea on the Malleolus externus tibia, is frequently present, and varies in size. There is often another bursa at this spot, under the superficial fascia.

Bursa mucosa subcutanea over the Os cuboideum, is tolerably often found, and about the size of a walnut.

There is often a subcutaneous mucous bursa on the internal surface of the hock, over the Malleolus internus tibiæ, and in one instance we detected a small bursa at the posterior border of the Os cuneiform magnum (Os naviculare).

Bursa mucosa subfascialis on the anterior surface of the inferior third of the tibia, under the tibial fascia. It has an elongated form, and commences on the anterior—inclined to inner—border of the tibia, under the superior transverse (muscle) ligament, and passes in an oblique direction from above and inwards to below and outwards over the Flexor metatarsi, with which its posterior wall is united; it ends on the anterior surface of the same just before it divides into its insertion branches. The bursa is from 8-10 ctm. long. Sometimes another subfascial bursa is found on the external half of the anterior surface of the tibia, about 4·5 ctm. long, partly covering the Extensor pedis.

Subtendinous Bursa and Tendon Sheaths.

EXTERNAL (*lateral*) SURFACE.—*Tendon sheath of the lateral extensor of the phalanges* (Peroneus, *Percivall*). It commences, *prætor propter*, 2-4 ctm. above the external malleolus, covers and bridges over the channel through which the tendon passes, and loosely envelopes the tendon itself. It is strengthened externally by the muscle, ligaments, and fascia. It ends on the superior part of the metatarsus, about 1 ctm. below the inferior transverse ligament. This thin transparent sheath—which is tolerably firmly united to the long lateral ligament of the hock-joint internally, and the tibial aponeurosi externally—possesses a "mesotenon" about the width of two or three fingers, which takes its origin at the posterior border of the channel.

ANTERIOR SURFACE.—A little to the outside we find the tendon sheath of the anterior extensor of the phalanges (Extensor pedis, *Percivall*). It commences at the external malleolus, passes downwards over the anterior surface of the hock-joint, and ends just before the union of the peroneus with the Extensor pedis. This sheath is strengthened by the superior transverse, middle loop, and inferior transverse muscle ligaments, with which it is loosely united. It possesses a broad "mesotenon," about 3 ctm. at its widest part, which takes its origin from the fibrous layer of the capsule of the tibio-tarsal articulation; and in its inferior half covers both surfaces of the Extensor pedis accessorius.

Internally to this bursa we find a *Bursa vaginalis* on the muscular portion of the Flexor metatarsi (M. tibialis anticus). It takes its origin at about the level of the malleolus, and is situated between the fleshy and tendinous portions of the Flexor metatarsi, so that its anterior wall is in apposition with the posterior surface of the tendinous portion, and the posterior wall with the anterior surface of the muscular portion. At the lower part of the last-named portion the bursa passes round to that surface next the joint, and then accompanies the insertion branches; so that the internal (medial) branch is covered downwards from 1 ctm. on its external (anterior) surface, and 2 ctm. on its internal (posterior) surface; and the anterior (straight) branch to the same extent on its internal (posterior) surface, and ceases about the upper border of the Os cuneiform magnum (Os naviculare), and the same on the external (anterior) surface.

INTERNAL (*medialen*) SURFACE.—*Bursa mucosa* under the internal branch of the muscular portion of the Flexor metatarsi. A bursa which, according to Dieckerhoff, is of great practical importance in Spavin. It is irregularly circular in shape; its internal wall is in apposition with the Ossa cuneiformi magnum, medium, and parvum, and is firmly united to the

ligaments of the hock-joint found here by connective tissue; its external wall is loosely connected with the aponeurotic covering, which contains the internal branch of the muscular portion of the Flexor metatarsi, running obliquely from its origin on the anterior surface of the tibio-tarsal articulation to the Os cuneiformi parvum and head of the internal small metatarsal bones respectively.

Tendon sheath of the oblique flexor of the phalanges (Flexor pedis accessorius, *Percivall*), is about 30-35 ctm. long. It begins about the centre of the tibia, and is situated at this spot between the belly of the deep flexor of the phalanges (Flexor pedis) and the tendon of the accessorius; it takes its course downwards through the groove in the internal malleolus and the internal ligaments on the posterior border of the astragalus and cuneiform bones; as it passes the cuneiform bones it is in relation with the last-mentioned bursa. It then passes the posterior border of the internal small metatarsal bone, where it lies between the bone and the sheath of the Flexor pedis, and remains as a separate sheath along the tendon until it joins the deep flexor. The sheath possesses at its superior half a "mesotenon" about 2 ctm. broad, and is externally strengthened by the aponeurotic fascia covering the tibia and hock-joint.

POSTERIOR SURFACE.—*Bursa vaginalis* under the tendon of the superficial flexor of the phalanges (Flexor pedis perforatos, or tendon of the Gastrocnemius internus, *Percivall*). It is a sheath whose posterior wall is united to the anterior (internal) surface of the tendon, where it forms a cap for the point of the calcis, and its anterior wall is related to the tendon of the M. gastrocnemii externus and posterior surface of the calcaneus. It usually commences where the tendon of the superficial flexor passes round to the posterior surface of the tendon of Zwilling's muscle and begins to expand. It then passes between both tendons, gradually widening as it approaches the point of the calcis, and then passes downwards, gradually narrowing to about the centre of the calcaneus. Laterally it projects over the borders of the perforatus tendon, the gastrocnemii tendons, and the tuberosity of the calcis; it communicates by an opening on its external sides with the following Bursa calcanei. The lateral parts of the bursa are covered by the tibial aponeurosis.

Bursa mucosa situated between the cartilaginous joint of the calcis and the insertion of the M. gastrocnemii (Gastrocnemius externus, *Percivall*)—Bursa calcanei of man. It is always present, and is about 4 ctm. long, and from 2·5-3 ctm. broad.

Tendon sheath of the deep flexor of the phalanges (Flexor pedis perforans, *Percivall*), commences, *præ. prop.*, the width of three fingers above the external malleolus, passes downwards over the posterior surface of the tibia and capsule of the tibio-tarsal articulation, with which it sometimes communicates (see Franck, l.c. p. 338), and is here strengthened by a fibro-cartilaginous plate; it then takes its course over the posterior surface of the hock-joint, where it is intimately united with the ligaments under it, and passes in between the perforans and the superior suspensory ligament; it terminates just before the oblique flexor tendon joins it, *i.e.*, about 5 ctm. below the lower row of tarsal bones. As the sheath passes the hock it is bound down and strengthened by the fibrous expansion of aponeurosis (annular ligament) at this part (Ligament. tarsi plantare), whilst superiorly and inferiorly of this ligament it projects. The sheath has a very broad "mesotenon" (6-8 ctm. broad) at the posterior part of the hock; it takes its origin from the external wall of the sheath, in the region of the internal border of the annular ligament, which it lines.

Finally, it is perhaps worth mentioning other *Bursæ synoviales*, the most important of which is situated on the anterior surface of the hock, between

the astragalus and cuneiform magnum, and external anterior ligament of the hock; also smaller ones between the metatarsal bone and cuneiform medium also, between the cuneiform magnum and medium. These project in spaces between the various ligaments at these parts.

Reviews.

VETERINARY PHARMACOLOGY AND THERAPEUTICS. By J. BRODIE GRESSWELL, M.R.C.V.S. (London: H. K. Lewis. 1885.)

PRACTICAL VETERINARY REMEDIES. By G. S. HEATLEY, M.R.C.V.S. (Edinburgh: Maclachlan and Stewart. 1885.)

Mr. Gresswell, in his second literary venture, has accomplished as useful and, in its way, as complete a task as in the "Manual of the Theory and Practice of Equine Medicine," to which, it may be said, this is a complement. Within the compass of 179 pages, a lucid and most excellent description is given of all the remedies comprised in veterinary pharmacology, for we cannot discover a noteworthy omission. The descriptions of the drugs are brief, yet sufficient, and clear enough to be understood by an average student; while the formulæ appear to be good, and well adapted to meet the requirements of the cases they are designed for. Many of these, we are told, were those of the author's father, the late Mr. D. Gresswell, of Louth, whose name and long and wide experience are a solid guarantee of their value. All the newer remedies are included—even to Cuca or Coca, and its alkaloid, Cocaine. Within the limited space of twenty-eight pages is given a therapeutic index of diseases and symptoms, which will be found very useful to the busy practitioner, affording, as it does, at a glance, the appropriate remedies for each of the enumerated diseases. Altogether, we have no more complete or handy book on the subject than this; it is almost small enough to be carried in the waistcoat pocket, and yet it contains more practical matter than any other work of the kind with which we are acquainted. For the student and the practitioner, it embraces everything they require, and a hearty welcome is certain to be accorded to it when its merits become known. It does author and publisher great credit, and it is to be hoped they will receive the encouragement they deserve.

Mr. Heatley's "Practical Veterinary Remedies" is, we presume, intended for the general public, and if so, it may to some extent fulfil the intention. At any rate, we cannot discover in what respect it can prove useful to veterinary surgeons, as, unlike the last noticed work, it contains nothing that the practitioner has need of, or that is not to be found in the older works on veterinary medicine. It is, therefore, beyond the scope of this Journal to notice it, further than to announce its publication and its aim. There are a few mistakes here and there, which are of no great importance, so far as amateurs are concerned; but we cannot understand why "musty hay" should be entered among veterinary remedies.

THE DISEASES OF POULTRY. By J. WOODROFFE HILL, F.R.C.V.S. (London: Office of "Poultry.")

We believe this is the first work on poultry in this country written by a veterinary surgeon; and though it is only intended for amateurs, yet it merits consideration from members of the veterinary profession, as it deals with a subject which is not only interesting to the comparative pathologist, but should receive attention because of its importance. Poultry rearing and feeding is a valuable industry, though not recognised as such to any considerable extent in these islands, unfortunately; and the losses from disease are sometimes quite serious. In order to assist the amateur in averting or curing the different affections to which fowls are subject, Mr. Hill has given a plain description of these causes of loss, with the treatment most likely to prove successful in overcoming them; and that this will be the case, his own experience may be relied on as sufficient evidence. The book is of a convenient size, and contains about 170 pages. It concludes with a section on *post-mortem* examinations of fowls, which should be useful to veterinary surgeons. A short sketch of the anatomy of a fowl might have been introduced with advantage.—G. W. S.

INDIAN STOCK-OWNER'S MANUAL. Translated into Tamil. By JAMES MILLS, M.R.C.V.S., Army Veterinary Department. (Madras: Printed at the National Press.)

The Indian Government is at last rousing up to its duty to the agriculturists of India, and is endeavouring to assist them in keeping their flocks and herds free from disease, and teaching them how to cure them when they are ill. Veterinary and agricultural schools are established in the different Presidencies, and in each of these there is a member of our profession to instruct in veterinary matters. These instructors are drawn from the Army Veterinary Department, and some of them have greatly distinguished themselves in this direction by their teaching and writings. Among the foremost of these is the author of the above work, who, in addition to being lecturer on zoology and veterinary medicine and surgery in the Madras Agricultural College, is also Inspector of Cattle Diseases in that Presidency. The manual which he has prepared is in the Tamil language, and is intended for the cattle-owners of Southern India, whose stock suffer from almost every conceivable disease. A portion of the work had already appeared in 1883, as "Plain Hints on the Diseases of Cattle in India." For the purpose, nothing could be better than the plan and style which the author has adopted, and if those for whom the book is written will only follow out the directions so clearly given, they and their country must greatly benefit. The most serious difficulty to be encountered in the suppression of contagious diseases of the most fatal kind, is the religious aversion of the natives to destroy animals, and this Mr. Mills has done his best to overcome. Another drawback is their objection to cutting up the bodies of dead animals, which is a great hindrance to making autopsies; and here, again, he points out the utility of the practice, and how religious scruples may be respected while *post-mortem* examinations are made.

Proceedings of Veterinary Medical Societies, &c.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE summer quarterly meeting was held at the Queen's Hotel, Leeds, on the 31st July; the President, Mr. J. E. Scriven, in the chair.

The SECRETARY introduced the subject of the desirability of repealing clause 9 of the Supplementary Charter.

Mr. FLETCHER and Mr. SMITH said the clause was clearly an infringement of the rights of the members of the College, and Mr. Smith moved a resolution. "That, in the opinion of this meeting, Clause 9 of the Supplementary Charter should be repealed."

Mr. PETER WALKER seconded, and thought the action of the clause would prevent numbers of excellent and worthy members of the profession aspiring to higher veterinary honours.

Messrs. AXE, SCHOFIELD, and PICKERING thought the institution of the degree a step in the right direction, but the examination ought to be more practical for the older and more respectable members.

The HON. SECRETARY thought that, the clause being instituted by the Council in order to raise the social status of the profession, it would be a retrograde movement to repeal the clause without any trial as to its working, and he moved, as an amendment, "that no action be taken in the matter by this Society."

Mr. A. W. BRIGGS seconded the amendment, although he had no particular feeling in the matter.

Mr. CARTER was of opinion the privileges of members had been tampered with; still he thought to repeal the clause would appear like a retrograde movement.

Mr. SMITH'S proposition was carried by twelve votes to two.

Mr. GREENHALGH described a remarkable specimen of

THE ECHINOCOCCUS VETERINORUM.

The subject of the case I am about to relate was a red and white cross-bred aged cow, the property of a client of mine at Armley near Leeds, and I was called in first to see her on the 4th of May in this year. Considering what occurred subsequently it would be valuable were we acquainted with her early history; but that, I regret to say, I am unable to relate fully. However, she was purchased from a farmer as a new-calven beast, eight weeks prior to May 4th, in the neighbourhood of Masham, and to all appearance, as far as I can learn, was at that time a good, healthy, sound animal, in fair condition. After her arrival at Armley, the cowman noticed that her fæces were unusually thin, and this state of affairs gradually became worse.

Slowly, but surely, the beast lost her condition, the fæces became more watery, and from giving a good quantity of milk, which she did at first, it was now reduced to about a pint at each end of the day. The owner had applied all the ordinary remedies to check the diarrhœa known to him and his neighbouring cowkeepers; and I can assure you the quantity of nostrums poured down that poor animal's throat had been no trifle. I examined her; the only observable abnormal appearance was an enlargement on the right side of the abdominal cavity; otherwise there were no outward indications of internal disorder. She had a good dew on her nose, her horns and ears were natural to the touch, and she ruminated and ate fairly well, but of course there was the diarrhœa and emaciation. My treatment consisted, first, in administering a strong saline drench, which was followed up afterwards daily by astringents—such as catechu, opium, and eventually tannic acid. For a day or two she seemed to rally under the treatment by

the mild astringents; but on the 12th she ceased ruminating, and her appetite was gone; by the 15th she had become extremely emaciated. I persuaded the owner to have her killed, and arranged to be present on the following day to see her slaughtered, and to make a *post-mortem* examination to discover the cause of the persistent diarrhœa. When she was opened, I was astounded. The butcher vowed she had a calf in her, and the owner looked at me as much as to say "This is a job if she has not calved at all."

However, that doubt was soon set at rest, for the "calf" turned out to be the liver, or what had once been that organ, but enlarged to such a monstrous size as I had certainly never seen before, and for many good reasons never wish to behold again.

It was attached by strong fibrous bands to the peritoneum, and when detached from the abdominal cavity and placed on the scales, it turned them at eleven stones three pounds.

I candidly admit that I was mystified, and unable to account satisfactorily to myself for such a state of things; two or three veterinary surgeons saw the "liver," as did also several medical men of this town, but none could describe what had been and what was the cause of this enlargement.

There was not five pounds of real hepatic substance in the whole organ. It consisted almost entirely of large cysts, with thick walls, containing numerous smaller cysts, and all filled with a clear, straw-coloured fluid. The result of a consultation with our worthy Hon. Secretary was that I sent half the specimen to Professor Williams, and asked as a favour to be told his opinion. In a few days I received a letter stating that it was a most valuable specimen of the multiple cysts of the *Echinococcus veterinorum*, which gives rise to the small ($\frac{1}{6}$-inch) tapeworm of the dog, the *Tacina echinococcus;* rarely seen in this country, but common among the Esquimaux and their dogs.

In the Professor's opinion, the disease had been in existence for many months, probably years, basing this remark upon the thickness and density of the walls of the capsules. I may state that it was partly at the suggestion of Professor Williams that this (to me) interesting case has been brought before you to-day.

In studying the history of this hydatid, one cannot help being deeply impressed with the discovery of this baneful intruder upon the animal economy of the herbivora in our midst. Nor is the interest confined to veterinary surgeons alone; for to the members of the medical profession, having the care of the people of this country as their responsibility, the existence of the echinococcus is of the deepest importance, for when developed in the human subject it proves most fatal, the number of deaths resulting from it in northern latitudes, being, I am told, something enormous, whilst in the dog it is a certain agent of death. When the heads are introduced into the alimentary canal, they generally lodge in the small intestines, attach themselves to the walls by their powerful hooks and suckers, and eventually perforate the coats of the bowels, and it is in this initial stage they cause the most irritation, and consequently are most likely to prove fatal. When present in any quantity, they are bound to prove an awkward thing to get rid of, if, indeed, they do not prove fatal.

By the courtesy of Professor W. O. Williams, who has supplied me with some slides taken from the cysts contained in the specimen I sent to Edinboro,' I am enabled to show you some characteristics of the cestode under the microscope, and only hope that by being able to recognise the disease, we, as veterinary surgeons, may contribute our quota towards stamping it out, by burning all specimens we should happen to come across in our morbid examinations, and so prevent, as far as possible, its reproduction.

Mr. FLETCHER had seen a diseased liver in a horse, weighing upwards of twelve stones, but referable to scirrhous or cancerous deposit.

Mr. PICKERING had under his care a herd of shorthorn cattle affected with Rot; he had one of them slaughtered, and found the liver studded with abscesses, the result of the ravages of the *Distomum hepaticum;* several of the herd were more or less affected, but with the aid of proper remedies they all recovered.

The PRESIDENT moved, and Mr. WHITEHEAD seconded, a vote of thanks to Mr. Greenhalgh for his interesting paper. Carried unanimously.

Mr. M. NAYLOR (who is in ill health) wrote to the effect that, many years ago, he saw at the College in Camden Town a cow affected in a similar manner to Mr. Greenhalgh's case; the cow was sent up from Dorsetshire, and there was a distinct enlargement upon the right side, very perceptible when the cow was walking. She was nine or ten years old. Upon being destroyed by order of Professor Sewell, the liver was found to weigh one hundred and eleven pounds; one of the cysts measured eleven inches across each way. Dr. Carstairs, of the London University, made a beautiful coloured drawing of the morbid specimen, which will doubtless be still preserved in the Museum, along with many other pathological drawings executed by that gentleman.

Mr. T. FLETCHER read an instructive and very interesting paper upon

SOME DISEASES OF PIGS.

I have been induced to bring before your notice this unsavoury subject from a feeling that we, as a body, are certainly deficient in our knowledge and attention to the diseases of an animal that plays such an important part in the food supply of the world. It is a very easy and comfortable way, on being requested to attend a pig, to say, Oh! kill it; but there are instances in which the owner places such a high value on the animal that it becomes necessary for us to give unremitting attention to the case, and obtain for ourselves that just credit for which we all so earnestly strive. There is also the poor man or widow whose rent depends on "piggy." That my paper will be disappointing to many, I justly fear, and crave your indulgence, as those older members of the profession know it is no easy task to snatch sufficient time from the daily routine of practice to work up the scientific theories and facts of the diseases in question. I have not attempted that; I have simply confined myself to facts as they have come under my notice, as far as my memory serves me, and during some five-and-thirty years' practice.

Parturition.—I have chosen parturition as the commencement, for without subjects we cannot have cases.

The period of gestation is about sixteen weeks, but the gilt with first litter will often go seventeen weeks, and even longer, without any abnormal symptoms; and considering the enormous quantity of young that are annually born, the breeder has little cause to complain of assistance, either professional or otherwise, being often called into requisition. When your services are required, you will find the sow straining violently, and very few other external symptoms present. The hand and arm should be well greased and gently and slowly passed, giving the vagina time to dilate. Having accomplished this, you will find a fœtus of such size as to render a little traction necessary for delivery, or a fœtus in such a position across the passage as to render normal parturition impossible. In such a case the fœtus must be placed in a proper position, either by the hand, or when that is impossible, the accompanying hook or forceps, should be inserted into the mouth or rectum. When the fœtus has been removed, do not examine too far forward for others, as such procedure is likely to cause fits. Allow time for others to come forward, as they generally will, or it may be that three or four be born and then one to remove.

Dead Fœtus.—When a sow shows all the natural symptoms of "pigging" at the proper time—mammæ filled, labia enlarged, etc.—without any violent or even normal amount of straining, and in the course of a day or two the labia is reduced in size, the mammæ become cold, and the milk secretion is stopped, you may rest assured that you have dead fœtuses in the uterus (or, as pig-men call it, "a bellyful" of dead pigs). The sow about this time begins to be dull and refuse her food, membranes injected, and very often purging; if fat and in good condition have her slaughtered, for if allowed to live, and the fœtuses not come away, your patient dies or becomes greatly emaciated. The treatment, if any, should be the same as for other septic diseases.

Prolapsus Uteri or Vagina.—One of the sequels of parturition is prolapsus vagina, together with the inversion of a *portion* of the uterus. I have never seen a complete inversion of the uterus as in the cow, sheep, etc.

Prolapsus vagina will frequently be present before parturition, and it will be necessary to return it and hold it in position until the fœtus comes forward, when the appliances must be removed until after delivery. Occasionally you may meet with prolapsus vagina and one horn of the uterus. This brings to my mind a case in which a veterinary surgeon in Lincolnshire was sued for £20 for malpractice to a sow during parturition. The animal had given birth to one pig when the veterinary surgeon was called in; he, finding prolapsus of the vagina and inversion of one horn of the uterus, returned them and inserted a skewer across the vaginal opening, and left instructions that as soon as another fœtus came forward they were to remove the skewer and allow delivery to take place, then again inserting the skewer. The attendants did not do so, but let the sow strain herself to death, then entering an action against the veterinary student as before stated. There was some difficulty in making the judge and jury understand the case, until it was explained that the uterus was very much like the finger of a glove, and that when one of the layers became inverted it completely prevented the passing out of any body. This fact, and the proof that the veterinary surgeon left instructions for the skewers to be removed, ended the case in his favour, and costs for four professional witnesses. There are many great difficulties to contend with, but the value of some breeding sows compels you to try what skill can accomplish; a truss is of no use, from the fact that it is almost impossible to keep it in position.

Prolapsus Ani—This is rather common, more particularly amongst breeding sows, caused by their eating cinders, pieces of wood, and frequent costive condition of the bowels. Will sometimes find several inches of rectum protruding. Treatment: A cloth shou'd be tied over the rectum and held in position by being fastened round the loins, and passed between the hind legs; keep the protruding portion clean with carbolic liniment; most astringents cause too much irritation. Special attention should be paid to the state of the bowels; give castor oil and N. Hyocm. ʒi. to ʒii.; sometimes calomel has a good effect. After the bowels have been well emptied, feed very sparingly on sloppy food in which plenty of lard or dripping has been mixed. If sloughing sets in there is no use treating; a fat animal should be immediately slaughtered.

Mammitis frequently follows difficult cases of parturition, showing Metastises from womb to glands; also follows easy cases, and is accounted for by a chill or a feverish and inactive state of the bowels. It is not so difficult to contend with as in some animals; a dose of calomel, followed by S. Mag., and rubbing with camphor liniment, will generally remove it in a few days. Have never seen such bad results as in other animals.

Milk Fever.—Not very common in the sow; none of the violent symptoms shown in the cow. Most frequently spinal; begins with dropping of hind

legs, mammæ swollen and hard, loss of milk, bowels costive, urine scanty and high-coloured, skin cold. The early symptoms so resemble the paralysis often met with in pigs from deranged stomach and bowels, that were it not for the hardness of the mammary glands, and the coma which soon follows, it would be difficult to distinguish it from ordinary paralysis.

Treatment: Warmth, and a piece of flannel dipped in hot water and wrung out, and laid over the sow. Keep the litter away, and turn the sow over, or muscular cramp will supervene; give enemas and pass catheter. Little gruel.

Paralysis.—From indigestion, causing costiveness or diarrhœa, is of frequent occurrence, especially amongst brewers' pigs, where a good deal of sour ale is given. The animal is generally pretty lively, sitting on its haunches and dragging itself from place to place.

A few doses of Sulph. Mag. and stimulating the spine will generally restore them in a few days.

Rickets.—Nature and cause the same as in other animals; very seldom treated.

Rheumatism.—Frequent; at a loss to say what is the cause; have seen it most in well-bred and well-fed pigs. Very little swelling of the joints, most in the hocks; fore legs straight and stilty, the animal usually grovelling about on its knees, as though suffering from fever of the feet, and evincing pain on being made to move about. The appetite is not much affected except in the latter stages.

Treatment: See to the comfort and cleanliness of the animal, allowing plenty of good dry straw; rub the joints with a mild turpentine liniment, give Pot. Bicarb., Mag. Sulph., and Acid Salyi.—they will usually take it mixed in the food.

Foot-and-Mouth Disease.—Pigs very readily take this complaint, and are a great source of transmission to other animals. It begins with tenderness in the feet, and often confines itself to the feet, causing great pain, and sloughing of the claws. When the mouth is affected it is mostly the tongue. It causes great constitutional disturbance, and is more fatal than in ruminants.

Treatment: Poultice the feet with cow-dung, and dress with C.B. liniment; give S.S.; have not seen any particular benent from salycilic acid.

Congestion and Pneumonia.—Sty-fed pigs are very subject to both these complaints. Congestion in summer when the days are hot and nights cold, and Pneumonia when it is wet and cold night and day. I attribute this peculiarity to the fact that pigs do not perspire like most animals (not even by the mouth, like the dog). I think cold showers bring on Pneumonia sooner than anything else, for wet seems to abstract the heat from the body. Pigs that have water to roll in during very hot weather do not suffer from Congestion.

Symptoms of Congestion: The animal will be found standing in a corner of the sty, breathing heavily but not fast, dull, ears cold and of a bluish pink colour—in fact, the whole of the body cold, membranes injected, bowels constipated, and urine scanty and high coloured.

Treatment: Rub the sides well with mustard, or in severe cases, mustard, vinegar, and turpentine, and put over that a sheet of paper to keep it moist and keep up the action; give Se. until warmth returns, then give St. combined with Sulph. Mag. If not convalescent in a few days they seldom do any good.

Pneumonia, or, as it is called by pig-men, "rising of the lights," is the most frequent disease we have to contend with, and if not always fatal, generally spoils the animal. As I have said before, exposure to wet weather is generally the cause, pigs will bear a good deal of cold if it is not associated with

wet. It is often brought on going or returning from market, or being kept in a sty where the wet drops off the roof. It is considered by some pig-keepers to be epidemic, but such is not the case. The earliest symptom is an increase in the respiration; but this is often overlooked until the animal has begun to cough a good deal. The appetite is not much impaired for three or four days, so that it is not much noticed, but after this time he refuses food, and may be seen standing restlessly in a corner, breathing fast, and if moved begins to cough violently. Should treatment not soon relieve these symptoms, the breathing becomes worse, the animal is gasping for breath, the mouth open, anxious expression, and death closes the scene. From the commencement the skin varies in temperature, sometimes being extremely hot, and at other times cold; also it assumes a purplish colour, but as this is a very general thing in many diseases of pigs, it has no significance beyond denoting an altered condition of the circulation. The breathing and cough are the two most notable symptoms. As to temperature, I must say that until lately I have not used the thermometer, but where I have it has indicated 102° to 104°; pulse, as taken from the fore leg above the knee, quick and compressible, but as I have not yet been able to satisfy myself what is the normal pulse of this animal, I have taken more notice of the quality than the quantity. Some pigs' pulse I have found to be 40 in health, others in the same sty 60; but it is very seldom they will stand for you to take the pulse.

Treatment: Like many other inflammatory diseases, if we had but seen them in time, bleeding would have been beneficial, but when called to one of these cases the time for bleeding is passed, or else the pig-man has done what he could by cutting the tail or ear. I sometimes open the vein with my penknife. Although you may sometimes get blood pretty freely from the tail, I object to the ears being cut, on account of after sores and the mess the animal makes in shaking the head. Give three or four good doses of calomel, ʒp. to ʒi., with ʒi. to ʒii. of S. Mag.; follow this by a mixture of Squills ʒi., Sp. Chlorof. ʒiii., Vini Ipecac. ʒii., Aq. to ʒvi., one or two tablespoonfuls three times a day. Or, Squills ʒi., Hyoscem. ʒp., Aq. ʒvi., two tablespoonfuls three or four times a day. Dress the sides well with mustard, etc., and wrap a towel or broad bandage over it.

Apoplexy.—Pigs are particularly liable to this form of disease; it is of three kinds: congestive, without rupture of the vessels of the brain; congestion, with serous effusion; and congestion, with rupture of blood-vessels. The form that is most prevalent is simple, or congestion without rupture. The only premonitory symptoms are a champing of the jaws, frothing more or less at the mouth, and standing with legs propped out as if going to fall, when suddenly the head is thrown upwards and backwards, and the animal rolls over, the eyelids convulsively twitching, and struggling violently for a few minutes. The cause is usually over-feeding on a too stimulating diet, although I have seen it result from powerful direct rays of the sun on the animal. Brewers' pigs, and those kept at large boarding schools, are frequently affected—the former from getting too much beer, the latter getting the liquid in which salt meat has been boiled. I would here caution you to inquire closely into the food supply of pigs affected with Apoplexy, as I have seen six good pigs lying dead at once from nothing else but being fed on swill from a pork-butcher's, which has contained a lot of brine, or liquor, the residue of the ham or bacon-salting process. Salt-poisoning is a fact well known to the keepers of pigs. Sometimes salt is put into swill in hot weather to make it keep, but in all forms it is equally prejudicial.

Treatment: A bucket or more of cold water dashed suddenly into the face of the animal is the best temporary relief; then bleed pretty freely, and give a good dose of Sulph. Mag. or sulphur, or what I now think is better, S.S. ʒii., Acid Hydrocyan. M. x. to xx., or Bromide of Potassium ʒp. to

3i. Medicines must be given between the attacks. When the animal is in the fit it is very difficult to say whether it will recover; but the symptoms must be closely watched, and if he is longer in it than usual, and the skin changes to a purple colour, the knife will be the best doctor.

Measles.—This disease is more easily recognised after death than before, the cellular tissue between the skin and the muscles showing a good deal of congestion. One of the symptoms during life is discolouration of the skin, which, as I have said before, is so common in the pig; but here we have connected with it an irritableness, the animal evincing a great desire to rub against anything within reach. It is not at all a dangerous disease, and the pig will usually recover if allowed sufficient time. He becomes dull, refuses part of his food, but soon becomes amenable to treatment, which should consist of a few doses of Sulph. Mag., and sulphur, and a brisk rubbing of the skin with vinegar and water.

In the discussion that ensued, several members joined, the principal topic being the appearances of the intestines in Swine Fever, the essayist not having adverted to this disease as he thought its pathology had been fully dilated upon recently.

Mr. SCHOFIELD thought we were much indebted to Mr. Fletcher for his excellent paper, and moved a vote of thanks to him. The proposition was seconded by Mr. AXE, and carried with acclamation.

Mr. FLETCHER returned thanks, and described an ingenious noose for catching dogs.

SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

(*Continued from p.* 212.)

An invitation was then given by the President to Mr. Greathead to speak. The President mentioned that the Royal Society for the Prevention of Cruelty to Animals, having a legacy of £500 left, stationed an inspector at Rochester, but when the legacy was gone the inspector was withdrawn, and now there was a local society, to which Mr. Greathead was solicitor.

Mr. GREATHEAD thanked Mr. Martin for his very great kindness in inviting him to the meeting. Mr. Martin had intimated to him that the subject of societies for the prevention of cruelty to animals would be brought forward, and that he thought it would not be fair to make complaints unless some one was present to take up the cudgels in behalf of the societies. He was the hon. secretary of a little society working in a district which had a population of probably 150,000. It was a society which was purely and essentially local. It had no connection with Mr. Colam, or the Royal Society, or any other society. Their money came from their own people, and they were essentially local. He did not say one word for or against the Royal Society. The remarks Mr. Martin had made, he felt, did not apply to him at all.

The PRESIDENT: They do sometimes.

Mr. GREATHEAD: I feel really there is nothing to answer, because I don't take any part of that as applying to my society. If Mr. Martin will kindly mention any particular case, I am prepared to explain anything he has to complain of.

The PRESIDENT: I think it would be rather invidious to mention any particular case. What I wanted principally to convey is our distrust of the inspectors.

Mr. GREATHEAD: I think it is unfair to ask a man to answer a complaint of which he is not acquainted. Generally, the conduct of my society

is as good as I believe it is possible for it to be. We have a committee, consisting of gentlemen of the town, who are well known, and who would not lend themselves to any action that might be commented upon as dishonourable.

The PRESIDENT: Not if they knew it.

Mr. GREATHEAD: We are none of us perfect, and if our society came before the public, and everybody said we were perfect, I should think there was something wrong. I don't know of a single case brought before the magistrates here in which I or any one have been told we ought not to have brought it forward. I have never had the slightest intimation from the magistrates that I was exceeding my duty.

The PRESIDENT: Cases are dismissed.

Mr. GREATHEAD: Out of the number we had last year we only had six dismissed, and some of those were dismissed, not because they were not proper cases to bring before the magistrates, but on some technical ground. Really, if we are going to place any confidence in our magistrates, we ought not to say, because a man is not acquainted with horses, that he is going to give an unfair decision. It is no object to them to favour the society.

The PRESIDENT: Sentiment.

Mr. GREATHEAD: Well, the proof of the pudding is in the eating, and if we exceeded our duty we should not get so many subscribers, and should not receive the approbation of the magistrates.

The PRESIDENT here mentioned a particular case in which he thought Mr. Greathead's society had been harsh.

Mr. GREATHEAD explained and defended the prosecution in that instance. He then said, I sincerely and earnestly believe this society is doing a great work, and we have never, to my knowledge, persecuted any man. We caution over and over again, but we must not confine ourselves to cautions and be laughed at. The moment the society becomes a farce through simply cautioning, that moment I leave it. I have had the approbation of leading members of the veterinary profession, including Mr. Fleming, in carrying out the duties, and I do not think the remarks of Mr. Martin apply to my society. If the society at any time declined to prosecute a man because of his social position, that moment I would resign.

Professor PRITCHARD: I should be very sorry for it to go forth that the Royal Society was not represented here, because I belong to the committee. I want to remove from Mr. Martin's mind an erroneous impression. In the first place no prosecution by the Royal Society is carried out until the matter has been before the committee. The officer has no power to prosecute

The PRESIDENT: Mr Colam has, I think.

Professor PRITCHARD: None without the sanction of the committee.

The PRESIDENT: I am personally acquainted with a case in which an inspector of the society summarily prosecuted the owner of a horse he stopped in the street.

Professor PRITCHARD made a note of the name of the inspector. He then asked if it was correct that the Royal Society removed their inspector from this locality when the £500 legacy was expended.

Mr. GREATHEAD: Yes.

Professor PRITCHARD: For what reason?

The PRESIDENT: Because the money was gone, I suppose.

Prof. PRITCHARD: You say magistrates are always willing to convict?

The PRESIDENT: They lean to the society.

Professor PRITCHARD: I know a case in which a horse was driven on three legs, but the magistrates dismissed the case. Another summons was asked for, which they refused, and the Royal Society had to go to the judges.

Lord Coleridge soon put the magistrates in their proper position, and granted a *mandamus*, and they not only granted a summons but were made to convict. I can assure you that is not a single case by numbers. I have been before magistrates scores of times when it has been the greatest possible difficulty to get a conviction, although the evidence was beyond denial, and they have absolutely had to be threatened before they would do what they knew they ought to do. If there are magistrates more disposed to deal fairly with the society than others they are the paid magistrates, and not the glorious unpaid. I think it is unfair to refer to poor people. I have been in prosecutions when the noblest men of the land have been the defendants. I believe the society does an immense amount of good, though it is bound to err sometimes. I think if the President weighs some of his points over he will be inclined to alter his opinion.

Mr. PYE: I as a farmer believe the local society has done an immense deal of good. In fact, I subscribe to it, but I think if there were more practical men on the committee it would be better. I think half the men on the present committee really cannot be practical men enough to know whether cases are cases of cruelty or not. I think if there were more practical men on the committee they would know what was really culpable cruelty and what was a casualty that might happen to anybody.

Mr. GREATHEAD: I'll make a note of that.

The PRESIDENT: My object in bringing the matter forward is that I know from experience there is a great deal of exaggeration in many cases.

Mr. PYE: I quite agree.

The PRESIDENT: Whenever I can assist the society I do, and I never oppose it unless I am obliged to. It isn't often noblemen are prosecuted.

Professor PRITCHARD: You can't find a duke in every street.

Mr. MYLES: These horses get out of the hands of the better men, and the poorer men buy them.

The subject then dropped, and

Mr. BANHAM read a paper on Spavin, which is appearing in the VETERINARY JOURNAL.

Discussion was invited upon the paper.

Professor PRITCHARD: With regard to the catchy action, I think our friend has overlooked a little matter. A horse never brings its hock to that flexed condition which he represented on the table. If he did so the front of the fetlock would strike the belly every time he moved. The jerky motion is due, not to elasticity of the ligaments, which possess no elasticity, but to the fact that the two principal connecting ligaments, those between the astragalus and the tibia, are crucial, and are acting, to an extent, independently of each other. Even when suffering from Stringhalt a horse does not flex his hock to an extent to bring about that jerk. Now with regard to this bursæ that you speak of——

Mr. BANHAM: It's a pure bursæ. You can have bursæs under the skin. You can have deep seated or subcutaneous bursæs.

Professor PRITCHARD: What you call a subcutaneous bursæ is simply what areolar tissue is, a structure made up in a moist manner, so as to separate from the blood a quantity of serum. A spurious bursæ is similar, but coarser and more albuminoid in its character. Those we find in our own elbow and other places, but we have no such arrangement in front of the horse's hock. I will defy you to find it. There is a bursæ near to the spot you have named, but that is between a branch tendon of the *flexa metatarsal* and the bones of the hock. In dealing with that portion of the tendon I should advise any one who attempts Professor Dieckerhoff's operation to be very careful not to injure it. I think you, Mr. Banham, are under the impression that Spavin in nearly every case commences within the joint.

Mr. BANHAM: No, I have given no opinions of my own. I simply want to get the opinion of this meeting.

Professor PRITCHARD: Well, the people you quote lay it down so. My impression, and I hold it very strongly, is that in the majority of instances it begins on the outer surface of the joint. When we have to deal with articular disease in association with Spavin, we have very little chance to get rid of lameness. You may fire, blister, use escarotics, use them in any way you like. If articular disease is associated with it, to bring about anchylosis (bring it about as you like) is the only chance; if that is correct, we must come to the conclusion that hundreds of horses suffer from Spavin, and are treated, and recover, and the disease is entirely confined to the external surface. As to when the pain is most marked, I do not think we can lay down any rule. If a horse is lame, but if the articular surfaces are not involved in the disease, the further he goes the better he goes; but if the articular surfaces are involved there is ulceration going on, and the farther he goes the worse he goes. But beyond that there is no rule as to when the pain is most marked. I have known horses with very large Spavins—one as big as a hen's egg—which have never been lame. Most of you are aware a committee has been formed, on the suggestion of Sir Frederick Fitzwygram, to lay down rules as to what should be considered soundness or unsoundness in horses. But I think we are losing sight of one fact when we attempt to lay down rules. The law of the country has laid down what is sound and what is unsound, and we are bound to abide by it. Lord Campbell says that what does now, or may hereafter interfere with a horse's usefulness constitutes unsoundness. The lawyers of the present day put it in another way, and say if the seeds of disease exist in the animal at the time of its sale it is unsound. So that, whatever rules we may adopt, they will have no influence on the decision of a court of justice. I should like to see more unity in our certificates, but how is it to be got? Certificates are simply expressions of our opinions, and our opinions don't agree. Take the matter of Splint. There are Splints, and Splints, and what appears to me to be a case of unsoundness is to another man a matter of very little consequence, and there's the difference of opinion. It applies to other things, such as Cataract in the eye. The matter has been on the *tapis* for the last thirty-five years to my personal knowledge, and if you examine literature you will find it's a hundred and thirty years. With regard to absorption of Spavin, I have no doubt the enlargement does become lessened to a very considerable extent, but I have no doubt also that whenever a horse once has Spavin, the whole of the traces are never removed. Dr. Spooner used to say, "Once a Spavin always a Spavin. Once a Splint always a Splint." As to treatment, I do not believe there is any particular patent way. Analyse the whole of the treatments and you will find the very large majority reduce themselves to one principle, and that is, active counter-irritation. You may produce it in a number of ways, but it amounts to the one principle in the majority of instances. There is what is called the new operation of Hunting's; there is nothing new in it. I can recollect, when I was a boy, my father performing an operation which amounted to the same thing; instead of passing a knife under the skin, he used to, and still does, use a thin hot iron to divide the skin, and as he considered brought about the very same result, and looked upon it as infallible. Professor Spooner's operation I have seen performed several times with good success.

Mr. F. WRAGG: As to Mr. Banham's first question, I have seen Spavin in hocks of different angles, different sizes, and different shapes. I think, as far as my memory goes, I have seen it most in those with an angle of greater than 140 degrees. Next as to the seat of the disease, Mr. Banham is of opinion it commences inside; my friend who has just sat down, considers it

commences outside. I rather differ with both of them. I have always inclined to the theory that it commences in the interosseus ligaments. The kind of Spavin that most often produces lameness is, in my opinion, that situated anteriorly. As to Spavin being absorbed, I quite agree with the remarks of Professor Pritchard. As to whether it is unsoundness, I say decidedly it is unsoundness, and I will also make a remark here about coarse hocks. I believe it is general among practitioners to give certificates of soundness for horses with coarse hocks. I will take what Lord Campbell said as to unsoundness. I have seen several horses that, in my opinion, had coarse hocks when I passed them ultimately become lame from Spavin, and therefore I shall never give a certificate of soundness myself for a horse with coarse hocks. As regards treatment, I have tried all sorts except this Dieckerhoff's operation, but I pin my faith to the firing-iron, and to firing pretty deeply, and putting a good blister on afterwards. As to its being hereditary, I should certainly object to breeding from horses that had Spavin.

Mr. EDGAR: Our thanks are due to Mr. Banham for the trouble he has taken in a matter of much importance to us and the public. Mr. Wragg's theory is one thing, Professor Pritchard's another, and Herr Dieckerhoff's a third. But there are matters which can be settled beyond argument or theory. Whether Spavin originates in the bone, or in the tendinous structure, or outside altogether, can be demonstrated by section. Sections of the hock can be made to prove it if we work microscopically and bring forward specimens. With regard to breeding from Spavin, it is most hereditary. Sidebones have been largely eradicated in some districts owing to breeding from mares and horses unaffected, and I do not see why the same thing cannot be done with Spavin. If farmers and breeders would make up their minds to this, we should be striking at the foundations of this disease. With regard to treatment, we have each our special method, and one is little better than the other. With regard to absorption, I have had a case of it. I had an animal which had been treated for enlargement of the fetlock joints, and rested, and blistered, but my diagnosis of it was ulceration of the hock joint. It was treated by pyro-punctuation, and there was a very considerable exostosis from it. After three months it could not work, and then a large deposit was thrown out over the surface of each hock, and the horse worked for eighteen months "carrying" its hocks and not flexing them. Then this exostosis became absorbed, and the cruciform bones were locked, and lameness came on as bad as ever, and the animal was destroyed.

The PRESIDENT: I think the value of Professor Pritchard's opinion is very great. I have seen all kinds of hocks, the small and the well-developed—some even with Stringhalt; but I do not think there is any formation that predisposes a horse to Spavin. I think in all kinds of hocks you will meet with Spavins. I don't think you ought, in a court of law, or in a certificate, to condemn a horse because its hocks are large and coarse. A large experience shows us that horses with large hocks are better capable of bearing fatigue and work, and carrying the weight of their bodies than horses with small hocks, and I think you get more serious instances of Spavin in small hocks than you do in long, well-developed hocks. Coarse hocks are not necessarily diseased and unsound. As to Mr. Edgar's suggestion, the thing would be to select a horse in which Spavin had commenced, and it would be rather expensive to purchase horses for killing with incipient Spavin. I should never breed from horses with any bony enlargement or bony deposit. There is no doubt there is a constitutional ossific diathesis, and "like begets like." As to certificates of soundness, you have your reputation at stake, and you must act accordingly. If there is Spavin commencing in the bone, it must involve the ligaments, and I think once a Spavin always a Spavin.

Mr. HOGBEN : I have known cases where, after firing, blistering, and rest have failed, the animal has been put to work, and has become sound.

The PRESIDENT : A case of anchylosis, I should think.

Professor PRITCHARD concurred.

The PRESIDENT : Why does the lameness pass away after a certain amount of work ?

Professor PRITCHARD : Owing to increase of circulation, the quantity and quality of the synovia in the bursa is increased and improved.

Mr. BANHAM : With regard to the bursæ, all true bursæs are lined with endothelium, whereas spurious bursæ are not. What we call true bursæs are nothing more than spurious bursæs, really brought about by an ulceration of the areolar tissue. With regard to Dieckerhoff's operation, I have seen it performed, and it sets up tremendous irritation and inflammation; and if it does not he puts in something to make it. It does not scar the animal, and if it does not succeed you can resort to something else. It is a treatment, I think, worthy of our attention. Where the disease of Spavin commences I am not myself certain. That requires that we should put our knowledge together, and that is one of the reasons why I brought the subject forward. With regard to the flexion, I was aware that the elasticity is due to the crucial action of those two ligaments, but I do not know to what angle the hock has to go before that flexion takes place. That would be another thing well worth looking to. I have seen Stringhalt horses that have made wounds on their abdomens. I must think that this flexion comes into play in those cases. I do not think a bony enlargement ever gets smaller, or but very little, if any. I think the wasting is due to the connective tissue or fluid enlargement around the seat of the Spavin, just the same as Splint. With regard to soundness, I do not see why there should not be some agreement Why should one man call a Spavined horse sound, when another does not? If they both agree there is Spavin, one has no right to give a sound certificate.

Professor PRITCHARD : If a man writes a certificate of soundness and the horse has Spavin, the party who buys can make him pay.

Mr. BANHAM : Does this meeting think that if an animal has any disease we ought not to certify it sound? (General assent.)

The SECRETARY : I always point out if a horse has a Spavin, or anything else, but I say, "In my judgment he is a good horse, and you may buy him." I do not suppose on two out of ten certificates I write sound.

Mr. BANHAM : If that is so, we ought not to have half the cases in court we do have. Half the cases are not upon differences of opinion, but on a different construction of opinions.

This ended the discussion.

A vote of thanks was accorded to Mr. Banham for his paper, and another to the President for his conduct in the chair.

The PRESIDENT : I think the profession is rising in importance, and I am pleased to see we are so well represented here. I think we shall gather a great deal of practical good from these discussions.

The meeting then ended.

The members and several local friends then dined together at the "Bull," the President in the chair.

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above association was held in the Medical Institute, Hope Street, Liverpool, on the 14th August; the President, J. W. T. Moore. Esq., in the chair.

The discussion on Mr. H. Summer's paper was postponed until the next meeting.

The PRESIDENT then read the following address, at the close of which the usual vote of thanks terminated the meeting.

Gentlemen,—Ever since the formation of veterinary medical associations, it has been the custom for the President of an association to commence his year of office by giving an inaugural address.

Following such precedent, it would have been my duty to have delivered an address at the meeting last February; and it may not be out of place if I recapitulate the reasons of my not doing so. Having received instructions from the Privy Council to hold myself in readiness to proceed to Newcastle-on-Tyne on an early day in April, I thought the matter carefully and anxiously over, and came to the conclusion that I would best serve the interests of the association by tendering my resignation, thus giving an opportunity for a gentleman to be elected in my stead who would be on the spot, as it would be out of my power to pay the necessary attention to the affairs of the association, or to attend all the meetings during the year. To my surprise, I was asked not to have my letter of resignation read, but to retain the position to which I had been elected. In deference to the unanimous desire of the members present, I consented to remain in office. Never dreaming for one moment that my resignation would not be accepted, I had not prepared my address; and being unable to attend the last meeting, I will now, with your permission, although late in the year, give you a short address.

Gentlemen, allow me to cordially thank you for the honour you have conferred upon me by placing me in the proud position I occupy as President of this society, and also to thank you for the further confidence you placed in me by not accepting my resignation.

I am of those who look upon it as an honour, and one that each member should strive to attain. Imbued with these sentiments, although satisfied that your choice could easily have fallen upon a better and abler member of our society to be its President—one, who endowed with more scholarly ability, and more extensive and varied professional experience, would have added *éclat* to its deliberations—to none do I yield in earnestly desiring the welfare of our noble profession, and in seeing it advance with the requirements of this enlightened age. Knowing that labour, however slight it may be, if in a good cause, brings its own reward, I bow to your decision, and will endeavour to maintain the dignity and usefulness of the position.

Matters political and social, as pertaining to our profession, have of late been so ably handled in inaugural addresses and in letters to the respective journals, that little or no room has been left for further remark. We have had the views of the different schools set forth in the introductory addresses to the students, which show that we are very far from being the united profession we boast to be.

Much happiness and peace was to accrue from the cutting down of that upas tree, the diploma-granting power of the Highland and Agricultural Society of Scotland; and once under one university, together with an Act of Parliament to prevent any but duly qualified calling themselves veterinary surgeons, the professional millennium was to be reached; but the dissatisfaction expressed against our governing body, as shadowed forth by those addresses, must dispel any lingering doubts that were entertained that this desirable consummation had been reached. And it may be asked, why these onslaughts on the Council of the Royal College of Veterinary Surgeons? Is there any foundation in fact, why this obloquy should be heaped upon the Council, and especially the Examining Board?

The accusation, as framed in these introductory addresses, is that the

latter body has been too exacting in its demands on the students' knowledge of the profession they wish to become members of. Now, when we consider the number of failures in the late examinations, it would appear at first sight as if it were just; "but we must bear in mind that the Royal College of Veterinary Surgeons is the veterinary profession; and this does not exist for the schools, but the schools for it. It is bound by all the means in its power to not only do its duty to itself, but also to the public, by improving and testing veterinary education" (Fleming). The members of the Examining Board are tried men, above suspicion; their abilities no one can justly call in question, and I feel sure that no student is rejected who is competent to pass. Knowing that it is more particularly in the practical examination that students fail, would the schools not be acting in their own interests if they frankly admitted that they have not the facilities to give a thorough practical training, and, instead of thwarting the Council in obtaining the addition of an apprenticeship clause to the Charter, bow with a good grace to the inevitable, and have it established forthwith? For such, I believe, must be the ultimate issue of the present condition of things.

Gentlemen, we have all been students at one or other of the schools, and we must admit that the opportunities for acquiring practical knowledge in our time was *nil*. Has this been altered for the better since then? What say the students themselves? Either in the journals, or in personal communication with any of them, is not the burden of their complaint that they see next to nothing of practice at college? Several letters have been written testifying to the excellence of the arrangements for acquiring practical knowledge at one school, and the writers allege that in this case the students are to blame for not taking due advantage thereof; if so, why blame the Examining Board when they are rejected as deficient in knowledge?

We do not blame the professors, many of whom are, without doubt, earnest, zealous, and distinguished in the several subjects they teach; but they simply have not the facilities to enable students to acquire practical knowledge.

It is sheer nonsense to argue that because the apprenticeship clause of the medical students was done away with, ours ought not to be introduced; for every one must be conversant with the splendid opportunities afforded the medical student at the hospitals for the acquirement of practical knowledge. If it were possible that our students, during their theoretical training, could conjointly, as the medical students do, have such facilities, then it is evident no apprenticeship would be required; but, in view of the fact that there are no such institutions of sufficient importance in connection with our schools, the question arises, How are our students to be practically taught? and I answer, by being bound an apprentice with a veterinary surgeon, who, if he had a real interest in his profession, and a proper appreciation of the responsibility and trust imposed upon him as guardian and teacher, would take a pride in teaching his pupil the rudiments and practical details of it. And, in my opinion, this tuition should last for a period of not less than twelve or eighteen months, which, together with what could be acquired during vacation between terms, would surely go far to overcome the undoubted deficiency in our students.

Have we not the authority of the Principal Veterinary Surgeon to H.M. Army that it is in practical details that Army candidates fail?—and when over fifty per cent. of such cannot pass the required examination (and we must bear in mind that these candidates have received their diplomas) it is proof positive that something is wrong in their training. Could anything be more absurd, in the way of examination as to the soundness or otherwise of a horse's eye, than what we are told took place in Edinburgh in July of last year? Surely no Board of Examiners would be doing their duty either to

the student or the public, to certifiy that such a person was duly qualified to practise the art and science of veterinary medicine and surgery.

It is a very regrettable fact that such exhibitions are not isolated instances of incapacity, in a practical sense, on the part of either students or young veterinary surgeons.

And, now, gentlemen, just a word as to the composition of the Council and the Examining Board. I am of opinion that neither are, in the widest or truest sense of the word, representative of the profession. That England will, on account of the number of her practitioners, send the greater number to our Parliament, may at once be conceded; but that the porportion should be in the ratio it is at present is not, nor can it be, conducive to contentment within our ranks. If Scotland has cause for complaint in this respect, how much more has Ireland? She has but one representative on the Council, and none at all on the Examining Board. Is this a just representation? Is there only one man in Ireland of sufficient ability to sit in the Council? and are there none fit to be Examiners? Of the four gentlemen recently appointed as Examiners, but whose appointment was shortly afterwards rescinded, three reside in England and one in Scotland. Here, again, those engaged in practice or acting as Government veterinary inspectors in Ireland have been overlooked. I am one of those who feel sure that there are plenty of good men and true in our own ranks who are capable of fulfilling the important duties of Examiner, and I believe there are men in Ireland willing and capable to serve on that Board; and I venture to think that the sooner we realise the existence of this anomalous condition of our representation the better it will be for the peace of the profession. Do not, as a body, let us allow disloyalty to get hold of our profession; there are those who would gladly welcome a college in Ireland with power to grant diplomas, and an attempt has been made more than once to bring this prominently before the Government and to enlist its sympathy and support. We can have no objection to a school, but every objection to its being vested with power to grant diplomas.

But enough of politics; let us look briefly at our *Social Condition.*

First, as to our relations with the public. "These relations are not by any means satisfactory. Our profession, by not a small number of people, is looked down upon and sneered at; there can be no doubt about that. It is called a noble profession, and it is so; but its nobility is, I fear, sadly marred by some of its members, found in the highest as well as in the lowest walks of professional life." Admitting that this is true of the medical profession—and I cull it from one of their own journals—how much of it is not in as great a degree applicable to ours? Is not our profession equally noble with theirs? Nay! I would say more so; for I cannot conceive of a higher calling than the alleviation of pain in the lower animals. Man, by reason of his superior intelligence, can in some measure help himself in this as in all else, but the poor dumb beast cannot. Having a mission with such in view, should we not occupy a much higher social position than we do? Where does the blame lie? With ourselves, I am afraid, we must admit. Are our actions always calculated to inspire the public with respect for us? Do we strictly adhere to our mission? or is it but a cloak under which to hide our greater affection for horse-dealing, training, and racing, and the blacksmith's forge? Can anything be more derogatory than members of a noble and scientific profession carrying on at the same time businesses such as livery-stable keepers, job masters, contractors, coach and harness makers, cab proprietors, etc., etc.? I admit that it is difficult to dissociate the forge from our profession, but it can be done, and is done. But surely there can be no place amongst us for the former trades and callings, if we have any desire to see ours take its proper place in the ranks of the learned professions. But, granting that we practise none of these things, and adhere

strictly to the legitimate practice of our profession, let us take, for instance, the differences of opinion in a case in the Law Courts—one man swearing one thing, another in direct opposition, while a third maintains that both are wrong. Does not this show an inherent weakness that is not calculated to gain us respect, and that the sooner we have a common basis to work upon the better? I do not pretend to say that we can all be of one opinion in all cases; such a condition would not be normal, but rather mark a stage of stagnation in our progress in the prosecution of the causation and treatment of disease, if not an atrophy of it. It is in agreeing to differ that we hope to arrive at the truth, which is the goal of all scientific research; but I do say that in such cases as whether a horse has an exostosis on his hock or not, whether it is necessary to dock horses' tails or not, whether it is necessary to dishorn cattle or not, whether the performance of these two latter can be truly called operations or not, and whether they ought to be performed by veterinary surgeons or not, some common basis should be found upon which to act. So much has been said and written on the subject of Spavin and docking that I shall pass over these with the remark that there ought to be no division of opinion about Spavin; a horse has either a spavin or he has not, and a proper knowledge of the anatomy of the parts affected will enable one to arrive at a correct diagnosis. The docking of horses has been so effectually dealt with by Mr. Walker, of Oxford, and others that I need only say that while admitting the necessity to dock in isolated cases, I cannot agree with the indiscriminate docking that is carried on merely for the gratification of a depraved taste, or at the bidding of a coachman who has decided to his own satisfaction that it must be done.

With reference to the DISHORNING OF CATTLE, let me draw your attention to a case reported in the *Irish Times* of 25th November last, to which my attention was called by a professional brother, and my opinion, as to its cruelty or otherwise, desired.

It seems that in the County Meath the dishorning of cattle is extensively practised, and in this case the mutilation had been performed with an amount of barbarity and heartless cruelty that I did not conceive possible to exist in this, the nineteenth century, much less to be supported and countenanced by members of our noble profession. Noble, forsooth! what an empty sound, and how meaningless in the light of such revelations. A constable of the Royal Irish Constabulary met a man driving thirteen beasts which had recently been dishorned; blood was flowing freely, and tracing it up, he found the yard where the deed had been done (not by a professional man, however), in which were pools of blood partially covered over with litter. The only professional witness for the prosecution proved that the operation (?) had been performed in a most brutal manner, and in one instance some of the nerves and blood vessels of the brain were partially exposed. This was admitted by the defence, and the question practically resolved itself into one of whether it was right to dishorn cattle or not; and on this point some extraordinary evidence was given by three of our professional brethren; one of whom gave it as his opinion that it was absolutely necessary to dishorn cattle fed in yards on tillage farms, and, further made the extraordinary assertions that if fed in byres or sheds they would die of cold from want of exercise, and that tied up they would not live a fortnight! It would be interesting to know what practical data this witness has to base his assertions on, and how far they could be borne out by the stall-feeding farmers of the United Kingdom.

The evidence of the next witness (who stated that he was a member of Council of the British National Veterinary Association), was to the effect that it was right and necessary to deprive them of their horns, that they throve better, that it was not any more cruel than the majority of operations

usually performed on animals, and that it increased the value of the animal. Herein lies the one grand reason why this animal, which the all-wise Creator has made after his own glorious idea of perfection, should be mutilated and deprived of part of that economy which adds beauty and finish to its frame. Is there anything of an elevating or ennobling character in cutting and carving at a perfectly healthy best, especially when we are aware that it is not to alleviate pain, or assist nature in any of the varied forms of imperfection she displays? Is it worthy of members of a society who have for their motto "Humanity, Science, and Utility"? Where is the humanity to be found in this barbarous act? Where the science? Is it in the perpetration of an act that any cowboy can and does do with a common hand-saw? Where the utility, when the screwing on of a knob to the point of the horn would equally answer the purpose? Surely to support such cruelty as this is a perversion of our mission as ministering servants to the suffering brute creation. Nothing is more contemptible than client treating, and we should not evince any desire to conciliate or benefit owners at the expense of the animal, when we know that other means are applicable, but show that we have higher aims and aspirations in life than the mere getting of money.

Second, *Our relations with each other.* Are these satisfactory? Are we always quite loyal and honest to each other? Do we always do unto each other as we would be done by? Do we always behave as gentlemen should to one another? I fear not. It is needless to give examples; these will readily occur to all of you. The individual characteristics of human nature differ widely, from the most perfect to the most depraved. We cannot alter that. Still, I think we can do something which will elevate our profession into a position of greater honour and respect. We ought to be more loyal, more frank and honest with each other, showing more sterling reality in our desire to help one another. What is the use of prating about dignity and social status, and the rapid advancement our profession is making under new Acts of Parliament and Charters, if we do not practise the ways and manners of gentlemen towards each other and the public?

Fothergill, in the "Practitioner's Handbook," says: "Always remember that we have to sustain the reputation of our profession as well as our own; the reputation of the profession is the aggregate of the individual reputations of its members."

One main cause of our unsatisfactory relations with each other and the public is the mystery which underlies our fees. There is great competition in the profession, and in some quarters a great tendency to underselling; while there are some who do not scruple to adopt all sorts of dodges for getting patients at a professional brother's expense. Take, for instance, the fee for the examination of horses as to soundness. One charges a guinea, another half a guinea, while another charges *the ridiculously inadequate sum of five shillings!* Then, again, some send out all kinds of balls at two shillings and sixpence a dozen, and advertise the fact. Many other similar instances could be brought forward, but it would take up too much time. Let us be more united, let us be more business-like, and let our fees be more equable, and we shall be more honoured and respected than we are. The *Lancet* said, some years ago: "This is a free country, and men may dispose of their services on any terms they please." But there is a strong moral obligation upon all professional men to decline to give professional services on terms which the great majority of their brethren consider to be inadequate. Gentlemen, there is another very regrettable fact that we cannot disguise, and that is, like all other professions, there are men in our ranks who are addicted to habits of intemperance. I doubt whether we are, in any way, called upon to shield such men; on the contrary, I think we ought to afford them no protection whatever.

In an admirable address by Dr. Sheen, of Cardiff, in the *British Medical Journal*, he lays down five rules for the guidance of the medical profession, which it would be well for us to apply to ours. They are as follows :—

1. We should recognise the fact that we are a body of gentlemen, and should always act as gentlemen towards each other.

2. We should hold it as an article of faith to do what we conscientiously believe to be right, and in arriving at this belief we should be careful not to allow bias or feeling to influence our judgment. In reviewing any particular circumstances, we may, with advantage, ask ourselves the question, "What should I think the right thing to be done if our positions were reversed?"

3. If we should feel aggrieved at something done by a brother practitioner, and correspondence with him seem necessary, by all means let us write courteously, and not begging the question or indulging in language which we may afterwards regret, or which may call forth an angry rejoinder—

> "Stay,
> And let your reason with your choler question
> What you go about;"

and, above all things, let us refrain from sending our correspondence to the papers for publication.

4. If in any differences which may arise between any two of us, we cannot amicably settle the matter, let us, by mutual consent, submit it to the Branch Council of the Association, or to two or three trusted friends, with the understanding that we loyally abide by their decision.

5. If we are in the wrong, let us not be ashamed to acknowledge it.

And now to conclude with a few remarks anent our own association. Something was said, some time ago, about amalgamating with the Lancashire Association. I sincerely hope and trust that that day may be very far off indeed. It would be a thousand pities for this, the second oldest association in the kingdom, to become extinct by amalgamation with any other, or from want of support by the veterinary surgeons of Liverpool and neighbourhood. It is lamentable to think that so many members of the profession keep aloof from the society, and I feel sure if they only knew how much they lose by not joining it they would soon be with us. Let me entreat you, individually and collectively, to do your utmost to make this society a power in the land. Do not let it go forth that the influence of this society is on the wane. Let each one do his utmost to induce others to become members, and to bring back those who have forsaken the society.

Gentlemen, I have been associated with you for the last nine years, during which time I have had the pleasure of making many friends amongst you; and I regret to say that the time has arrived when, owing to the long distance I reside from here, it becomes necessary for me to sever my connection with the society. Although I may not be a member, I shall not cease to take as lively an interest in its well-being as I have hitherto done, and never shall I forget the pleasures I have had in attending its meetings and the benefits I have derived therefrom.

EDWARD KITCHIN, *Hon. Sec.*

THE NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY.

A GENERAL meeting of the above society was held in the Blackfriars Hotel, Manchester, on 9th September, the President, Mr. P. Taylor, in the chair.

Letters of apology from a number of members were read, after which the President, in a very able and lucid manner, congratulated the members on

the fact that the society had now completed its twentieth year, and gave a *résumé* of its work in the past and its prospects in the future.

From the reports of the Treasurer and Secretary, it appeared the society has defended or arranged some forty cases, at an expense of, in round numbers, £300; expended on benevolence, £150; working expenses for twenty years, £50; while the balance in hand is upwards of £2,400.

Several important alterations in the rules were then considered and agreed to, copies of which may be had from the Secretary.

The officers were then re-elected, as well as the Council, Messrs. J. M. Axe, T. Briggs, and S. Locke having been elected to fill three vacancies.

A vote of thanks to the President for his services in the chair terminated the proceedings. GEORGE MORGAN, *Hon. Sec.*

PROCEEDINGS OF THE THIRD GENERAL MEETING OF THE NATIONAL VETERINARY ASSOCIATION,

HELD AT THE MEDICAL INSTITUTE, EDMUND STREET, BIRMINGHAM,

ON TUESDAY AND WEDNESDAY, AUGUST 4TH AND 5TH, 1885.

The President (HARRY OLVER, ESQ., F.R.C.V.S.) occupied the chair.

The members present were:—Messrs. Wm. Anderson, Glasgow; Professor J. W. Axe, London; J. D. Barford, Southampton; F. W. Barling, Ross; C. J. Barnes, Cheadle; R. Beart, Birmingham; E. Beddard, Wolverhampton; J. Bell, Carlisle; F. Blakeway, Stourbridge; Hy. Blunt, Lutterworth; T. Briggs, Bury; W. Carless, Stafford; H. J Cartwright, Wolverhampton; T. Chambers, Dudley; H. Collett, West Bromwich; J. G. Cross, Mardol; W. Dale, Coventry; E. Faulkner, Manchester; Hugh Ferguson, Warrington; Sir F. Fitzwygram, Bart.; T. Fletcher, Sheffield; A. L. Gibson, Birmingham; T. Greaves, Manchester; A. Green, Dudley; O. Hills, Leamington; T. Hopkin, Manchester; T. Horton, Warwick; J. Howell, Rochdale; W. Hunting, London; J. S. Hurndall, Liverpool; F. J. Insall, Coleshill; R. C. Irving, Birmingham; W. C. Ison, Atherstone; H. Kidd, Hungerford; A. Leather, Liverpool; S. Locke, Manchester; A. Macadam, Tamworth; Professor J. Macqueen, Glasgow; C. Moir, Cardiff; W. J. Mulvey, Bishop Auckland; T. Olver, Truro; A. Over, Rugby; J. M. Parker, Birmingham; H. R. Perrins, Worcester; E. Price, Jun., Birmingham; W. Pritchard, London; J. H. Reynolds, Daventry; R. Roberts, Kendall; Arch. Robinson, Greenock; James Rowe, London; T. Runciman, Market Deeping; B. H. Russell, Grantham; R. Rutherford, Edinburgh; H. L. Simpson, Windsor; J. F. Simpson, Maidenhead; H. M. Stanley, Birmingham; Mark Tailby, Birmingham; R. C. Trigger, Newcastle-under-Lyne; H. Tweedley, Glasgow; J. B. Unsworth, Market Drayton; P. Walker, Bradford; Professor T. Walley, Edinburgh; J. Welsby, Liverpool; W. Whittle, Worsley; John Wiggins, Market Harboro'; Professor W. Williams, Edinburgh; J. B. Wolstenholme, Manchester; W. Woods, Junr., Wigan; F. W. Wragg, London, *Treasurer*; J. Malcolm, Birmingham, *Local Secretary*; and G. A. Banham, Cambridge, *General Secretary*.

There were also present as visitors:—Messrs. J. D. Allman, T. D. Arnfield, J. Attwood, T. H. Bartlett, M.B.; G. Boulton, Wolstanton; A. L. Butters, J. Clayworth, G. A. Drewe, J. Farndale, C.C., Birmingham; F. Fletcher, Coventry; A. B. Forsyth, Cannock; S. Gamgee, F.R.C.S., President of the Midland Medical Institute; F. C. Goldin, Rugby; A. Hill, M.D., Medical Officer of Health, Birmingham; C. H. Huish, H. Jordan,

J. Mauley, West Bromwich ; J. McGavin, Montgomery ; T. J. Merrick, G. Naples, Birmingham ; A. Oakes, Lloyd Owen, Lawley Parker, Councilman, Birmingham ; G. F. Prickett, Edgbaston ; F. Forster Rolfe, —. Saundley, M.D. ; W. Shipley, Jun. ; J. V. Solomoy, F.R.C.S. ; Lawson Tail, F.R.C.S. ; —. Tempest ; —. Underhill, M.D., Mayor, West Bromwich ; —. Valentine, Chief Inspector of Stock, Australia ; F. Warmington, Shrewley.

Apologies for non-attendance were received from the following members :— Messrs. W. Awde, W. F. Barrett, G. Bland, A. C. Cope, J. Roalfe Cox, President of the R.C.V.S. ; W. Duguid, Dr. G. Fleming, Principal Veterinary Surgeon, A.V.D. ; James Lambert, I.V.S., A.V.D. ; G. A. and H. G. Lepper, Professor J. McCall, A. J. MacCallum, E. Meek, J. D. Overed, H. Pritchard, Professor Robertson, W. A. Taylor, Hy. Thompson, J. P. S. Walker, Page Wallis, Joseph Woodger.

And also from the following visitors :—Viscount Newport, M.P. ; Sir A. Bass, M.P. ; Sir R. Peel, M.P. ; Mr. Albert Muntz, M.P. ; Mr. H. Wiggins, M.P. ; Alderman Avery, J.P. ; Captain J. W. Boultbee, J.P. ; Mr. G. Dixon, J.P. ; Mr. J. Jaffrey, J.P. ; Mr. Foster, M.F.H. ; Dr. Burdon-Sanderson, F.R.S. ; Mr. Archer, F.R.C.S. ; Mr. D. Crompton, F.R.C.S. ; Mr. Oliver Pemberton, F.R.C.S. ; Mr. J. Bridge, Mr. Barling, Mr. T. W. Mayor, Mr. R. G. Verney, and Mr. W. A. Wilson.

FIRST DAY'S SITTING.

The PRESIDENT opened the third General Meeting of the Association by announcing the Council's suggestions upon the business to be considered at the meeting.

The following Report was then received and adopted by the meeting.

SECRETARY'S REPORT FOR 1885, IN ACCORDANCE WITH RULE XLII.

Officers.

The officers elected at the last General Meeting, held at the Victoria University, Manchester, were the President-elect, a Life Vice-President, and six Members of the Council. The Treasurer and General Secretary were re-elected. The Vice-Presidents were left to be elected by the Council, and the Provisional Committee in the hands of Messrs. T. Greaves (President), H. Olver (President-elect), H. M. Stanley (President of the Midland V. M. S.), E. Beddard (Secretary of the M. V. M. S.), A. Over, H. R. Perrins, and R. C. Trigger.

The officers for the present year are as follows :—

President: Harry Olver, Esq., F.R.C.V.S.

Vice-Presidents : Dr. G. Fleming (life), Professor J. W. Axe (R.V.C., London), Mr. Tedbar Hopkin (Manchester), Mr. James Lambert (I.V.S., A.V.D.), Professor J. McCall, (Glasgow V.C.), Mr. H. L. Simpson (Windsor), Mr. H. M. Stanley (Birmingham).

The Council: 1. The President, Vice-Presidents, Treasurer, and General Secretary of the Association.

2. The Presidents and Secretaries of the existing Local Veterinary Medical Societies that are members of the Association :—

Mr. R. S. Barcham.
„ E. Beddard.
„ H. R. Bradshaw.
„ Alf. Broad.
„ W. Broughton.
„ T. Campbell.
„ J. Donald.
„ G. Elphick
Mr. Colin Gresty.
„ E. A. Hollingham.
„ H. Kidd.
„ Ed. Kitchin.
Professor T. Lewis.
Mr. S. Locke.
„ J. W. T. Moore.
„ John Malcolm.

Mr. J. B. Martin.
Professor J. McQueen.
Mr. J. M. Parker.
„ W. Penhale.
Mr. J. E. Scrivan.
„ T. H. Simcocks.
„ J. J. Sperring.
„ J. B. Wostenholme.

3. The Principals of the Veterinary Colleges :—

Professor J. McCall (Glasgow V.C.), Professor W. Robertson (R.V.C., London), Professor T. Walley (R.V.C., Edinburgh), W. Williams (N.V.C., Edinburgh).

4. Six members selected from various parts of the kingdom :—

Mr. Thos. Briggs.
„ C. Cunningham.
„ W. Dale.
Mr. T. D. Lambert.
„ H. G. Lepper.
Capt. B. H. Russell.

Treasurer : Mr. F. W. Wragg, London.

General Secretary : Mr. Geo. A. Banham, Cambridge.

Provisional Committee.

Mr. J. M. Parker, Birmingham, *Chairman.*
„ J. S. Barling, Ross.
„ J. J. Barber, Rugby.
„ F. Blakeway, Stourbridge.
„ E. Beddard, Wolverhampton
„ H. Blunt, Lutterford.
„ T. Briggs, Bury.
„ W. Carless, Stafford.
„ H. J. Cartwright, Wolverhampton.
„ T. Chambers, Dudley.
„ W. Dale, Coventry.
„ O. J. Hills, Leamington.
„ E. Meek, Walsall.
Mr. A. Over, Rugby.
„ H. Pritchard, Wolverhampton.
„ H. R. Perrins, Worcester.
„ E. Price, Birmingham.
Capt. Russell, Grantham.
Mr. H. M. Stanley, Birmingham.
„ M. Tailby, Birmingham.
„ W. A. Taylor, Manchester.
„ R. C. Trigger, Newcastle,Staff
„ J. Wiggins, Market Harboro'.
„ T. Greaves, } *Ex-officio.*
„ Harry Olver, }
„ F. W. Wragg, }
„ G. A. Banham, }

J. Malcolm, Birmingham, *Hon. Local Secretary.*

The Provisional Committee decided that the General Meeting should extend over two days, and be held in July, 1885. It was, however, subsequently postponed until August, as the Highland and Agricultural Society held its Show during the only week in July the meeting could be held.

The Committee then selected two subjects for discussion, and proposed the names of the essayists for the Local Secretary to obtain their consent to act. At the following meeting the names of the gentlemen were proposed who should open the discussions.

The Provisional Committee have again been fortunate in obtaining suitable premises for our meeting ; mainly through the kind instrumentality of Mr. S. Gamgee, to whom the best thanks of the Association are due.

Professor S. Gamgee has also consented to deliver an address of welcome to the members of the Association.

The Provisional Committee decided that space should be provided for exhibiting specialities of drugs, instruments, etc., during the meeting.

The Provisional Committee have also made arrangements for holding a Social Gathering during the evening of the first day. Many of them wished this should be an Invitation Dinner, but this was opposed by others, as they considered it was establishing a precedent which would ultimately be detri-

mental to the welfare of the Association. Therefore, it was decided the dinner should be open to all who wished to attend.

The Provisional Committee have again (for the third year) thought it advisable to forward a circular to every Member of the Profession in Great Britain and Ireland, inviting them to join the Association and attend the meeting.*

The circular was as follows :—

Dear Sir,—The Meeting of the National Veterinary Association for 1885 will be held in the Birmingham Medical Institute, Edmund Street, Birmingham, on the 4th and 5th of August next. As subjects of great importance to the profession will be brought forward for discussion, the Provisional Committee have made arrangements for a large attendance, and as they are anxious that the gathering should be as representative of the profession as possible, they would be glad if you will become a member, if not already one, and give them the pleasure of your presence at that Meeting. The Annual Subscription to the Association is 10s. 6d.

Visitors may attend the Meetings and join in the discussions if they will send their names to either of the Secretaries, who will remit them a ticket of admission.

The papers on the subjects for discussion will be printed and distributed to each member of the Association at least ten days prior to the date of the Meeting. At the Meeting the papers will be taken as read and the discussion at once opened.

ORDER OF PROCEEDINGS.

First Day.

11 a.m.—Election of President and Officers of the Association, and selection of next place of Meeting.

12 noon.—The President of the Birmingham Medical Institute, Mr. Sampson Gamgee, F.R.S.E., will give a short address of welcome to the Members. The President will then deliver his inaugural address.

2 p.m.—Mr. Rutherford will open the discussion on Mr. McGillivray's paper on "Epizootic Pleuro-Pneumonia."

Second Day.

10.30 a.m.—Professor Axe will open the discussion on Gen. Sir F. Fitzwygram's paper on "The Origin of Disease."

Specimens and subjects of importance may be introduced if time should permit, fourteen days' previous notice having been given to the President.

Samples of Drugs, Instruments, etc., as used in Veterinary Practice will be on Exhibition in an adjoining room.

Luncheon may be obtained at the Grand Hotel each day from 1 to 2 o'clock. At six p.m. on the first day of meeting a Dinner will be provided at the Grand Hotel, open to both members and visitors, tickets 10s. 6d. each.

To facilitate arrangements an early reply is requested. We are, sir, yours truly,

John Malcolm, *Holiday Street, Birmingham.*
Geo. A. Banham, *Downing Street, Cambridge.*

Since the above circular was issued we have been compelled to alter our Agenda, and we think it only fair to the Members of the Association to call their attention to it. It was announced that Mr. MacGillivray would write the

* The General Secretary wishes to apologise to the Scotch and Irish Members of the profession for the mistake which was made, of sealing down the corner of the circular sent to them, whereby they were charged on its delivery.

paper on Pleuro-Pneumonia, but when he was applied to for it (by your Secretary) for the press, he wrote to say that as he had nothing original to say upon the subject, he could not undertake to fulfil the promise he had made to the Provisional Committee last November. This announcement greatly perplexed the Committee, as Mr. MacGillivray had not given them time to apply to any one else to take up the subject. However, your local Secretary started off to Edinburgh and placed the circumstance before Professor Walley, who at once complied with his request to furnish us with a paper on the subject of Pleuro-Pneumonia, for which the Provisional Committee beg to tender their thanks. Consequently, the Provisional Committee ask the Members of the Association to take into consideration the circumstances under which Professor Walley has placed the subject before them, and to overlook any portion of it they may think falls short of their expectations.

We also wish to impress upon all those who promise the Committee in future to prepare papers for discussion at the meetings to give them time to apply to others, if they find they are unable to fulfil their promise.

The following is the amended list of subjects to be considered :—

FIRST DAY.

Subject I.—"Pleuro-Pneumonia Contagiosa," written by Professor T. Walley. The discussion to be opened by Mr. R. Rutherford, and if time permits Professor Walley will open a discussion on "Swine Fever."

SECOND DAY.

Subject II.—"The Origin of Disease," written by Sir F. Fitzwygram. The discussion to be opened by Professor J. W. Axe, and if time permits Mr. Kidd will open a discussion upon "Clause 9 of the Supplementary Charter of 1876.

The meeting has also been advertised in the professional journals.

RULES.

The Provisional Committee have also undertaken to revise the Rules, as they were out of print.

A copy of the Amended Rules have been forwarded to each Member for their approval or otherwise at the General Meeting.

The following is a list of the alterations :—

AMENDED RULES.	OLD RULES.
Rule xxix.—The President shall be elected at the General Meeting previous to the first day of January of the next year, on which date he will enter upon the duties of his office. During the interval he shall bear the title of President-elect.	Rule xxix.—The President shall be elected at the General Meeting previous to that upon which he will enter upon the duties of the office, until which time he shall bear the title of President-elect.
Rule xxxv.—In addition to Life Vice-Presidents there shall be six others nominated by the Council from the Members of the Association and elected at the General Meeting.	Rule xxxv.—In addition to the Life Vice-Presidents there shall be six others elected by the Council from the Members of the Association residing in various parts of the kingdom.

AMENDED RULES.

Rule xxxvi. 1. The President, President - elect, Vice - Presidents, Treasurer, and General Secretary of the Association.

Rule xxxvii.—The Council shall manage the affairs and business of the Association, and shall nominate the President-elect, Vice-Presidents, Treasurer, and General Secretary for election at the General Meeting.

Rule xlii.—The General Secretary (or Secretaries) shall prepare a Report of the general state and proceedings of the Association for the current year, to be presented by him at the following General Meeting.

Rule xliii.—At each General Meeting the Council shall propose the place for the following General Meeting, nominate the names of the President, Vice-Presidents, Treasurer, and General Secretary, and also decide how the Provisional Committee shall be elected.

Rule xlv.—A Treasurer shall be nominated by the Council and elected at the General Meeting.

Rule li.—The General Secretary (or Secretaries) shall be nominated by the Council, and elected at the General Meeting.

MAJOR SUBJECTS.

Rule lxii.—These shall be upon Veterinary matters (subject to Rule 61) brought before the meeting in the form of a written paper or verbal address; upon which the Members will be invited to discuss.

MINOR SUBJECTS.

Rule lxiii.—These shall be merely questions submitted to the vote of the meeting by Members of the Association (subject to Rule 61), and upon which no discussion shall take place.

OLD RULES.

Rule xxxvi. 1. The President, President-elect, Treasurer, and General Secretary of the Association.

Rule xxxvii.—The Council shall manage the affairs and business of the Association.

Rule xlii.—The Council shall prepare a Report of the general state and proceedings of the Association for the current year, to be presented by them at the following General Meeting.

Rule xliii.—At each General Meeting the Council shall propose the place for the following General Meeting, nominate the President-elect, and elect the Provisional Committee.

Rule xlv.—A Treasurer shall be elected by the Council.

Rule li.—The Secretary (or Secretaries) shall be elected by the Council.

(*To be continued.*)

Army Veterinary Department.

Operations in the Soudan having ceased, and the troops there and in Egypt having been largely withdrawn, a large number of the veterinary officers employed have returned to England. The following however remain in these countries: C. Phillips (First Class), Senior in charge at Cairo; G. J. R. Rayment (First Class), at Suakin; W. B. Spooner (First Class); T. A. Mitchell, C. A. Betser, H. Haslam, J. Dundon, T. Taylor.

In his last dispatch relative to the operations at Suakin, Lieut.-General Sir G. Graham, K.C.B., commanding the troops in the Eastern Soudan, says: "Principal Veterinary Surgeon W. B. Walters administered his department with ability, and his officers satisfactorily attended to the sick horses and transport animals."

In his final Soudan dispatch, Lord Wolseley, in alluding to the administration of the various departments during the recent campaign, states that "Veterinary Surgeons Walters and Burt well performed the work that fell to them;" and in the list of officers whose services are deserving of special mention, he names Inspecting Veterinary Surgeon W. B. Walters and Veterinary Surgeons (First Class) W. Burt, C. Phillips, and A. E. Queripel. In the *Gazette*, August 25th, containing the promotions for the Soudan, Veterinary Sugeons A. E. Queripel and C. Phillips are promoted to First Class, ranking with Major.

Obituary.

We regret to record the death of Henry Watson Allison, M.R.C.V.S., Long Benton, near Newcastle-upon-Tyne, who died from Diabetes, at Harrogate, on the 26th August, aged 61 years. He graduated in 1850, and only relinquished, very reluctantly, the practice of his profession last year.

The death of the following members is also reported: Joseph Gibbs, Staple Grove, Taunton, aged 76 years; John Crockett, Dundee; and John Weston, Notts.

Notes and News.

DOCKING.—Doctors will disagree, to a proverb, but for an out-and-out wrangle nothing can beat the veterinary profession, and a case in point occurred at the second general meeting of the National Veterinary Association. The subject was that of docking horses, and the question at issue was whether the operation is a *necessary* one, because if it is necessary it cannot be called cruelty. Dr. Fleming and Professor Pritchard spoke very earnestly against the practice; they do not say that docking is never necessary, but they say that as a rule it is not necessary, that it serves no useful purpose, and that therefore it is cruel. Professor Axe, Professor Williams, and a host of lesser lights say that docking *is* necessary often, that it does serve a useful purpose, and that therefore it is *not* cruelty. And so the matter rests. It is pretty sure, however, that Mr. Colam, on behalf of the Society for the Prevention of Cruelty to Animals, will prosecute any veterinary surgeon for performing the operation without any apparent necessity for it, and the law will have to decide whether docking is or is not cruelty to animals. Professor Pritchard declares that a horse is much less likely to get its tail over the reins if it is not docked. Professor Axe says it is not a question of getting the tail over the reins, but of getting the reins from under the tail, and, therefore, the shorter the tail the more easily the reins can be got away. Professor Pritchard says the dock is always tender. Professor Axe says that "as a matter of fact,

when a horse has been docked, the cicatrice at the end of the tail never afterwards has the physiological sensibility peculiar to the undocked tail." Professor Williams says that docking is not cruelty; "some little pain is inflicted but it causes the animal little or no inconvenience." Dr. Fleming says, "Let those gentlemen who say that this is a painless operation *undergo it themselves.*" Capital idea that, only Mr. Colam would be down upon them, probably. Considering that the tail in man is but rudimentary, the amputation or excision of the *os coccygis* would doubtless be considered by the Society for the Prevention of Cruelty to Animals as an unnecessary infliction of pain, and dealt with accordingly. We agree with Dr. Fleming and Professor Pritchard that, outside certain special cases, the art of docking horses serves no useful purpose, and that it is, therefore, an unnecessary infliction of pain—an act of cruelty.—*Mark Lane Express*, Aug. 24.

PRESENTATION.—Recently, a handsome acknowledgment of service rendered was made to T. Hurford, retired Army Inspecting Veterinary Surgeon, by the Royal Artillery at Woolwich, to the officers of which he has, since his retirement, made himself agreeable and useful. The recognition consisted of a purse, and a handsome silver salver on which was the following inscription: "Presented, with a purse of 200 sovereigns, by the officers of the Royal Artillery, to their friend, Thomas Hurford, Esq., in acknowledgment of the many kindly services rendered to them in connection with their cricket, racquet, and lawn-tennis clubs. May, 1885."

HORSES IN IRELAND.—According to the agricultural returns, the number of horses in Ireland in the years 1884 and 1885 was 547,132 against 534,797 in the years preceding. Of those two years old and upwards 362,739 were kept for agricultural purposes, 30,807 for traffic and manufactures, and 25,178 for amusement or recreation. There were 64,978 one year old and under two years old, and 63,430 under one year old. Of the total number of horses, 171,504 were in the province of Leinster, 138,383 in Munster, 68,744 in Connaught, and 168,501 in Ulster.

EXPORTATION AND IMPORTATION OF HORSES.—During the month of August we exported 891 horses to foreign countries, against 1,052 in the same month last year. Their value was £50,103, compared with £91,614 last year. Of the number, 326 went to Belgium, 90 to France, 15 to the United States, 279 to British North America, and 181 to other countries. For the first eight months of this year we have exported 4,389 horses, at a value of £254,863, against 5,172, at a value of £309,339 last year. We have in August imported 2,719 horses, against 1,551 last year, their value being £21,435 against £17,809. During the first eight months of the year we imported 10,662 horses, valued at £145,471, against 9 545, valued at £187,778, in the corresponding period of last year.

SIBERIAN PLAGUE.—Siberian plague, affecting alike both men and the lower animals, is reported to have made its appearance in the neighbourhood of Odessa. Its destructive effects are more feared than rinderpest among cattle or cholera among men.

CIVIL VETERINARY DEPARTMENT IN INDIA.—The details of the new Civil Veterinary Department for India are still under consideration. A committee, consisting of Mr. Buck, with Colonel Wace, Mr. D. Smeaton, and Mr. Fuller, as Directors of Agriculture in the Punjab, North-West and Central Provinces respectively, met recently at Simla, to decide what final proposals regarding the Civil Veterinary Department should be placed before the local Government for consideration. The Allahabad paper believes that some more positive steps will be adopted for the formation of a Civil Veterinary Department in every province in India, and that the military authorities will lend, at any rate while the country is free from war, a certain number of veterinary officers to superintend provincial operations.

Correspondence.

CARDIAC SOUNDS.

DEAR SIR,—I trust you will kindly allow me space to attest the veracity of certain remarks made by my pupil, Mr. Shawcross, regarding cardiac and pericardial disease in the horse, which have been condemned in the August number of the *Veterinarian*. Although the critic, Mr. Richards, asserts that he is quite prepared to have a lot of scornful remarks heaped upon himself, it is not with the slightest intention of making scornful remarks, he evidently so justly expects, that I take up my pen to vindicate truth. The first scathing condemnation is put by the critic in the form of a question—"Now," he asks, "how can an aortic disease be double, as I do not think we ever find a double aorta connected with the left ventricle?" This question is easily answered: by a double aortic murmur we understand a systolic and a diastolic one, co-existent, as they are frequently in the horse. The case referred to was one of the double kind—the obstructive or systolic, and the regurgitant or diastolic, murmur. The critic evidently does not understand the meaning of the term double, and thinks that it refers to a double aorta. Each orifice of the heart may have a double murmur, and this is most frequent in the horse, in the case of the aorta. The critic then says, "if the disease was aortic, the murmur must have been single, and of considerable intensity to be heard," etc. The answer to this observation is that the murmur *was double*, as it must always be where there is stenosis of the aortic orifice, in addition to the disease of the semilunar valves, allowing of the regurgitation of blood into the left ventricle. It was not denied—it was not even hinted—that the murmur was not of great intensity.

"Why were not pathological details given?" asks the critic. The animal died after sending off the MS., and in the proof not much could be appended. Any details required can be given. With reference to the third case, it is complained that Mr. Shawcross does not say how he diagnosed the complaint or the arsenical poisoning. The poisoning was confessed to by the attendant, and the special lesions of the heart which were referred to were found at the autopsy.

The critic tells us that he was not aware that arsenical poisoning was ever associated with disease of the mitral orifice and Endocarditis. Is he unwilling to learn when he is ignorant of facts? or is he unwilling to believe? If so, how can he be answered? The fact is that acute arsenical poisoning is sometimes attended by acute inflammation of the endocardium and mitral valves. I have recorded many cases of this kind. The critic complains that the fourth case is insufficiently described. Further details can be given if necessary. In the fifth case, he says "he *infers* that the case recovered." Does he wish to be funny? for Mr. Shawcross himself writes that the case gradually made a good recovery. The critic says the *post-mortem* examination is not recorded. It is not usual to record *post-mortem* examinations in cases notified as having recovered and being still alive. With reference to the diagram, the seats and directions of the murmurs are copied from an original drawing, as stated, in order to show their position in relation to the chest-walls. Mr. Shawcross did not deem it necessary for his purpose to copy accurately all the other bones of the body. I blush for shame when I think of searchers after comparative pathology in the pages of our journals, finding that one member of our profession has to be taught by my pupil the meaning of such a term as "Double Aortic Disease," and also that heart murmurs are sometimes heard a long distance from the point of their origin. The critic advises Mr. Shawcross to give more details in future, "so that others of less ability than himself may profit by the reading of his cases." In an-

swer to this, I think no pupil would ever believe that individuals so deficient in knowledge as not to know the meaning of the term "Double Aortic Disease" would expect to be taught the elements of the veterinary profession. The critic must also be informed that sometimes aortic murmurs in the horse are heard at a distance of three or four feet, or more, from the points of origin. In conclusion, the remarks of Mr. Richards simply show how necessary is extensive practical experience for those who undertake to write. When any one states that he is not aware that such and such things happen in some cases of arsenical poisoning, he simply expresses his unwillingness to believe the record of those who have had many such instances under observation.

Louth. J. BRODIE GRESSWELL.

THE PROFESSION IN NEW SOUTH WALES.

DEAR SIR,—I shall be glad if you can inform me, through the medium of your Journal, what prospects there are for members of the profession in New South Wales, or any of the Australian Colonies, and whether emigration is, in the case of an energetic man having high qualifications, likely to be a successful venture? And, further, are any of the Government or army appointments obtainable by English veterinary surgeons?

As far as I can learn, there is, at present, no veterinary college established in Australia. If so, might not a mention of this fact by some influential person to Lord Carrington now, just prior to his departure, be attended with some good result in advancing the interest of the profession abroad? Apologising for troubling you, W. F. S.

[Can any of our readers supply the desired information?]

UNPROFESSIONAL ADVERTISING.

SIR,—Under this heading, Mr. Robert Laidlaw, of Albany, N.Y., makes some inquiries respecting Mr. Edward Moore, also of Albany, N.Y., in your last month's issue.

Being in a position to answer his inquiries, may I submit to him the following statement through the medium of your Journal?

Mr. Edward Moore, a graduate of 1877, was Cattle Plague Inspector for the British Government during a portion of that year.

Cattle Plague—at least a disease declared to be such by all veterinary surgeons who saw it at that time—appeared at Limehouse in 1877, and rapidly spread to large herds in and around London. The disease, promptly recognised by the heads of the veterinary department of the Government, gained no hold on the country, owing to the measures, perfect both in conception and detail, adopted by that department. Among those measures was the selection of twelve gentlemen, recently graduated, to carry out instructions from head-quarters.

These instructions were framed with a view to detect, isolate, and stamp out the disease

So well was this done, that in eleven weeks from their appointment the country was free from the disease. I was constantly in contact with Mr. Edward Moore during the period as a fellow-inspector. I know he saw cases of the disease, and in one place diagnosed it, and effectually superintended the stamping out process.

Mr. R. Laidlaw considers it strange that the British Government should appoint an inexperienced American student in preference to its own practical qualified men.

As a fact, they did nothing of the kind; they appointed, among others, Mr. Edward Moore, a member of the Royal College of Veterinary Surgeons of Great Britain, and therefore properly qualified, although this qualification has not always been held necessary by the department.

Mr. Edward Moore enjoyed the privilege of being the pupil of Professors Simmonds, Pritchard, Axe, and Brown; he was never rejected at any examination; and I think that his appointment ought to be considered a tribute to his ability, occurring, as it did, at a time when there was no dearth of candidates.

CHARLES SHEATHER, F.R.C.V.S.

SIR,—I can answer the question put by your correspondent, Mr. Robert Laidlaw, in the VETERINARY JOURNAL for September.

A Mr. Edward Moore, who graduated in 1877, was employed temporarily during that year as an Inspector of the Privy Council. Mr. Laidlaw is entirely wrong in stating that Cattle Plague has not been in England since 1866; the disease was re-introduced in 1872, and again in 1877. I may add that Mr. Moore and eleven other gentlemen who were appointed as temporary Inspectors in 1877 acted entirely under the direction of Prof. Brown and myself.—Yours truly,

London, *Sept. 7th.* ALEX. C. COPE.

ADVERTISING.

DEAR SIR,—I beg to hand you copy of an advertisement from the Dublin *Evening Telegraph* of yesterday's date:—

JAMES CROZIER,
VETERINARY SURGEON,
ELLISS'S QUAY,
Examined for Diploma R.C.V.S.,
Qualified by Examination in
ANATOMY, BOTANY, CHEMISTRY, AND MEDICINE.
Horses Shod and Examined. Terms Reasonable.

I must state that never, to my knowledge, have I seen Mr. Crozier, but I find, on referring to the register, that his name appears amongst the "Registered Practitioners." I am informed that he was a farrier in the Royal Irish Constabulary in the depot at Phœnix Park. He may be, for aught I know, a most estimable *farrier;* but that he should be permitted to issue such an advertisement as the above without coming under the penal clause (No. 16) of the Veterinary Surgeons Act, 1881, would appear to me to be an impossibility. If such advertisements can be used by persons who hold no diploma, then I say the Act is inoperative, and should be forthwith repealed. It is to be deplored that the public are not yet sufficiently educated in what constitutes a legally-qualified member of the college, and therefore the most superficial observer can see at once how such announcements as these may deceive those who read them, place their authors in a position to which they are not entitled; and by so doing prejudice the qualified members and fellows of the College in their rightful status and dignity.—Your obedient servant,

J. J. SPERRING, F.R.C.V.S.,
Hon. Sec. Irish Central Veterinary Medical Society.

Dublin, *September 2nd,* 1885.

[The person referred to has not made any misstatement in his advertisement. He studied at the Glasgow Veterinary College, and passed the first and second examinations of the Royal College, but failed to pass that for the diploma, for which he was examined on two or three occasions. He had been for at least five years in practice before the passing of the Veterinary Surgeons Act, and was highly recommended for registration by one of the oldest and most respected members of the profession in Ireland.]

CURTAILING HORSES OF THEIR FAIR PROPORTIONS.

SIR,—In reading the report of the National Veterinary Congress and the remarks offered on docking, I could not believe my eyes until I had wiped my spectacles very carefully, and replaced them upon the professional nose. I do not propose to occupy your space by questioning the pain inflicted in the operation or subsequently, but to call attention to the remarkable statement made by Professor Pritchard, and supported by Dr. Fleming—that a docked horse is more likely to get his tail over the reins than one that has not been shortened! I could understand this if drivers were in the habit of laying the reins along the crupper; then a short dock might catch them; but good, bad, and indifferent coachmen, as a rule, have some sort of touch, or "feel" the animal's mouth, and most vehicles have a dashboard or other appliance to raise the reins above the level of the horse's back, and if it is admitted that the reins are usually carried a foot above the anus, it is a mathematical impossibility to prove that a six-inch dock is more likely to be thrown over the reins than an eighteen-inch rudder. I bought a mare the other day with a dock eighteen inches long, and she was sold by an innkeeper for no other reason than this—he could not let her a second time to any one, because every time she was touched with the whip she swirled round her tail from whichever side she was stimulated, and caught the reins; the result being she would pull off to one side of the road or *into* another vehicle. She had no vice, but was useless for letting out on this account.

I took ten inches off this offending member, with the result that she can now be driven with comfort, and the innkeeper would be glad to buy her back again.

I have owned some hundreds of horses, and out of that number I have not seen more than half-a-dozen where the necessity for docking existed; but I maintain that there are some horses that are absolutely dangerous to drive on account of their tails, as well as a perfect misery to sit behind.

A country practitioner necessarily feels a great deal of diffidence in challenging the opinion of such men as Professor Pritchard, but it requires more even than the statement of a learned professor to convince one that an eight-inch dock will reach further than an eighteen; to my bucolic mind it is equivalent to saying that eight pence have more purchasing power than eighteen pence.

It is much to be regretted that any one should have suggested such an unworthy motive for the continuance of docking as the paltry remuneration for the work; if we allow such matters to be introduced into our discussions, we shall sink to the level of the taproom, instead of elevating our profession to the championship of domesticated animals.

I fear that most practitioners will have to endorse a good deal of what Mr. Briggs has said as to the persecution of cabdrivers and others rather than the prevention of cruelty by judicious admonition. I have had many such cases, and often lost valuable time in bringing about a reconciliation between the society's officers and the supposed offenders.

Only two or three weeks ago, I was asked to see an entire horse in a cab;

he was crooked in front and no longer good-looking enough for the owners of mares to fancy him; but he was well kept and fit for work despite his deformity, and a kindly explanation to the society's officer was sufficient to put an end to a smouldering quarrel. The officers had reason to suppose the horse wasn't up to the mark, and the driver had equally good reason for knowing that he was quite fit for work; and it is in such cases we, as veterinary surgeons, should assist the society and prevent persecutions by a little sacrifice of our own time, and without thinking of a fee. It cannot be expected that the R.S.P.C.A. can obtain men with the impartiality of a judge, the professional acumen of a veterinary surgeon, and the legal ability of a lawyer; yet they have to act the part of each, or try to do so, and it is not surprising that they often fail. Then, again, the officer is not allowed to act entirely upon his own judgment, but submits a report to Mr. Colam, who has to adjudicate *in absentia*, and the officer who finds himself committed to a prosecution too often shows an excess of zeal in trying to bring the case to a successful issue. As an old friend of the society I can see its faults as well as those who have had less to do with it; and though I know that Mr. Colam gets through an almost superhuman amount of work, it is impossible that he can sift each case at a preliminary examination like a person with half his capacity could do on the spot.

In conclusion, I would ask my professional brethren to maintain their right to be the best judges of what is and what is not cruelty, while affording the R.S.P.C.A. every assistance in its legitimate efforts to suppress cruelty, according to Professor Axe's definition of it.

East Grinstead, Sussex. HAROLD LEENEY, M.R.C.V.S.

AN APPEAL TO THE VETERINARY PROFESSION.

SIR,—The appeal made by circular and in the VETERINARY JOURNAL for September has been responded to by the following kind and benevolent gentlemen, members of our profession, to whom my own and Mrs. Bowles's best thanks are given :—

	£	s.	d.
Mr. J. F. Simpson, Maidenhead	0	10	0
„ H. L. Simpson, Windsor	0	10	0
„ Roalfe Cox, London ..	1	1	0
„ W. J. Mulvey, Bishop Auckland	0	10	0
Professor Duguid, London ..	1	0	0
Mr. H. J. Cartwright, Wolverhampton	0	10	0
„ Wm. Whittle, Worsley ..	1	0	0
„ T. Greaves, Manchester ..	1	1	0
„ J. H. Welsby, West Derby	1	1	0
Captain Russell, Grantham ..	1	0	0
Mr. E. Price, Birmingham ..	0	10	0
„ J. M. Parker, do. ..	0	10	6
„ G. E. Drew, Abingdon ..	0	10	6
„ E. Nuttall, Preston ..	0	10	0
„ Peter Taylor, Manchester	1	0	0
„ Charles Elam, Liverpool ..	2	2	0
„ W. E. Litt, Shrewsbury ..	0	10	0
„ W. Hardcastle, Ely ..	1	0	0
„ E. Kitchen, Liverpool ..	0	10	0
Carried forward	£15	6	0

	£	s.	d.
Amount brought forward ..	15	6	0
Mr. S. Hurndall, Liverpool ..	1	1	0
„ H. Kidd, Hungerford ..	0	5	0
„ R. E. L. Penhale, Hatherleigh	0	5	0
„ Saml. Locke, Manchester	0	10	6
„ Wm. Ridgman, Liscard ..	0	5	0
„ John Bell, Carlisle.. ..	0	10	6
„ Hy. Paradise, Dursley ..	0	10	0
„ Thos. Barker, London ..	1	1	0
„ J. Donald, Wigton ..	0	5	0
„ T. W. Wragg, London ..	1	1	0
„ J. Blunsome, Cirencester..	1	0	0
„ E. Faulkner, Manchester	0	10	0
„ J. H. Briars, Sheffield ..	0	10	0
„ T. A. Frost, Hounslow ..	1	0	0
„ J. W. Anderton, Skipton	0	7	6
„ Wm. Broughton, Leeds ..	0	10	0
„ Mrs. Sprague and Mr. A. Caudle, Kimbolton ..	0	10	0
Total	£25	7	6

On the 12th of August I sent £10. £4 of this has been paid for rent, £1 for sheets, etc., £2 for food, and £3 still in hand to last six weeks more. The balance of £15 odd I have arranged to send £1 every fortnight. Yes-

terday I spent half an hour with the old lady. She is eighty-three years old, has been bedridden for nearly seventeen years, paralysed of her limbs; her only son at home is hopelessly paralysed in right arm and right leg. Receiving 1s. 6d. per week, and half a stone of flour per week from the parish. The old lady is not in any suffering, is contented and resigned, but in great poverty, having been left penniless. This is a case that must enlist our sympathies, and most cordially do I emphasize Mr. Hardcastle's statement. viz., "I have no hesitation in saying any help would be charity well applied, and sadly, most sadly, needed."

Here is a lamentable instance of the neglect of not securing a reasonable competence for those dependent upon us, by joining the National Veterinary Benevolent Society. Oh, how deplorably sad it is if we are unfortunately snatched away by death, leaving those we love in destitute circumstances. Again I invite and strongly urge all members of the profession, for their own good, to join this excellent benevolent society.

Knott Mill, Manchester, *Sept. 14th*, 1885. THOMAS GREAVES.

CORRECTION.

IN Mr. Cunningham's letter in our last issue, in page 230, for "Scotland is the minority" read "Scotland is in the minority"; and in page 231, for "favouring members" read "favouring numbers."

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from H. Leeney, East Grinstead; J. Nettleton, Northallerton; R. W. Burke, A.V.D., Cawnpore; J. Hunter, Skene; J. Lambert, A.V.D., Woolwich; J. Mills, A.V.S., Madras; G. A. Banham, Cambridge; F. F. Collins, Dublin; R. H. Dyer; A. C. Cope, London; Dr. O. Larcher, Paris; W. F. Smith, Downham Market; G. Morgan, Liverpool; W. Broughton, Leeds; C. Sheather, London; C. Cunningham, Slateford; F. Smith, A.V.D., Woolwich; T. Greaves, Manchester; J. J. Sperring, Dublin; A. W. Hill, London; C. Gresty, Newcastle-on-Tyne; R. T. Richardson, Long Benton; D. C. Pallin, A.V.D., Dublin; J. Brodie Gresswell, Louth; E. Kitchin, Liverpool.

BOOKS AND PAMPHLETS: *J. Mills*, Indian Stock-Owner's Manual; *J. W. Hill*, The Diseases of Poultry; *J. B. Gresswell*, Veterinary Pharmacology and Therapeutics; *A. Lydtin*, Ueber die Perlsucht; *U. Caparini*, Importanza del Microscopio nell' Esercizio Pratico della Medicina Veterinaria; *U. Caparini*, La Cura del Farcino, o Mal del Verme; *G. S. Woodhead, M.D., and A. W. Hare, M.B.*, Pathological Mycology; *O. Larcher, M.D.*, La Pathologie Comparée, La Goutte des Oiseaux comparée à celle de l'Homme; *E. Hermann*, Die Vererbung von Pathologischen Zuständen Psychischen Mängeln und Fehlern der Form beim Pferde; Annuario d. R. Scuola Superiore di Medicina Veterinaria di Milano, 1885; *A. Zundel*, Der Gesundheitstand der Hausthiere in Elsass-Lothringen.

JOURNALS, ETC.: *Journal of the Agricultural Students' Association (Madras); La Villa; Archiv für Wissenschaftliche und Praktische Thierheilkunde; Revista Popular de la Exposicion Rural; Revista Argentina de Ciencus Medicus; Journal of Comparative Medicine and Surgery; Der Hufschmied; Recueil de Médecine Vétérinaire; Wochenschrift für Thierheilkunde; British and Colonial Druggist; Live Stock Journal; Clinica Veterinaria; Edinburgh Medical Journal; Kansas Live Stock Indicator; Chicago Live Stock Journal; Œsterreichische Vierteljahresschrift für Wissenschaftliche; Repertorium für Thierheilkunde; Zeitschrift für Vergleichende Augenheilkunde; Animal World; British Medical Journal; Mark Lane Express; Centralblatt für Chirurgie; Tidscrift für Veterinar-Medicin; American Veterinary Review.*

NEWSPAPERS: *Norwich People's Weekly Journal; Madras Mail.*